

N00213.AR.001563
NAS KEY WEST
5090.3a

WORK PLAN FOR NON-TIME CRITICAL REMOVAL ACTIONS AT FORMER DEFENSE
REUTILIZATION MARKETING OFFICE LAND SLIVERS AT NAS KEY WEST FL
08/01/2012
AGVIQ ENVIRONMENTAL SERVICES

Work Plan for Non-Time Critical Removal Actions at Former Defense Reutilization Marketing Office Land Slivers

Naval Air Station Key West
Key West, Florida

Revision No. 02

Contract No. N62470-08-D-1006
Task Order No. JM31

Submitted to:



U.S. Naval Facilities
Engineering Command
Southeast

Prepared by:



1000 Abernathy Road
Suite 1600
Atlanta, GA 30328

August 2012

Work Plan
Non-Time Critical Removal Actions at
Former Defense Reutilization Marketing Office
Land Slivers

Naval Air Station Key West
Key West, Florida

Revision No. 02

Contract No. N62470-08-D-1006
Task Order No. JM31

Submitted to:

Department of the Navy
U.S. Naval Facilities Engineering Command Southeast

Prepared by:



August 2012

Prepared/Approved By:

Amy Twitty, P.G., Project Manager

August 14, 2012

Date

Approved By:

Michael Halil, P.E., Deputy Program Manager

August 14, 2012

Date

Client Acceptance:

HAYWORTH.DANA.R.1264108450
1264108450

Digitally signed by HAYWORTH.DANA.R.1264108450
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USN, cn=HAYWORTH.DANA.R.1264108450
Date: 2012.08.16 06:34:40 -04'00'

U.S. Navy, Responsible Authority

August 16, 2012

Date

Contents

Acronyms and Abbreviations.....	vii
1.0 Introduction.....	1-1
1.1 Site History.....	1-1
1.2 Previous Investigations	1-2
1.3 Overview	1-3
1.4 Project Objective	1-4
2.0 Project Execution Plan	2-1
2.1 Scope of Work.....	2-1
2.1.1 North DRMO Land Sliver	2-1
2.1.2 South DRMO Land Sliver.....	2-1
2.2 Notifications.....	2-2
2.3 Pre-excavation Waste Characterization	2-2
2.4 Pre-Excavation Survey.....	2-2
2.5 Backfill Material Certification.....	2-2
2.6 Mobilization, Site Preparation, and Utility Survey	2-2
2.7 Soil Excavation.....	2-3
2.8 Soil Confirmation Sampling.....	2-3
2.8.1 North DRMO Land Sliver	2-3
2.8.2 South DRMO Land Sliver.....	2-4
2.9 Backfill.....	2-4
2.10 Post Excavation Survey	2-4
2.11 Site Restoration	2-4
2.12 Decontamination	2-5
2.13 Demobilization.....	2-5
2.14 Project Completion Report.....	2-5
2.15 Project Schedule.....	2-5
2.16 Traffic Control Plan.....	2-6
3.0 Sampling and Analysis Plan.....	3-1
3.1 Data Quality Levels for Measurement Data.....	3-1
3.2 Sampling Objectives.....	3-4
3.3 Soil Confirmation Sampling.....	3-4
3.4 Backfill Certification.....	3-4
3.5 Soil Disposal Characterization.....	3-5
3.6 Decontamination Water Disposal Characterization.....	3-6
3.7 Sample Documentation	3-6
3.8 Analytical Methods	3-7
4.0 Waste Management Plan.....	4-1
4.1 Waste Characterization.....	4-1
4.2 Waste Management.....	4-2
4.2.1 Waste Storage Time Limit	4-2
4.2.2 Labels	4-2
4.2.3 General Waste Management Requirements	4-2

4.3	Waste Transportation	4-5
4.3.1	Shipping Documentation.....	4-5
4.3.2	Department of Transportation Requirements.....	4-6
4.4	Transporter Requirements.....	4-6
4.4.1	Spill Reporting.....	4-7
4.4.2	Spill Response.....	4-7
4.5	Disposal of Waste Streams.....	4-7
4.6	Recordkeeping.....	4-8
4.7	Waste Tracking Log	4-8
5.0	Environmental Protection Plan.....	5-1
5.1	Regulatory Drivers	5-1
5.2	Protection of Air Resources	5-1
5.3	Protection of Water Resources	5-2
5.4	Protection of Land Resources.....	5-2
5.5	Protection of Fish and Wildlife	5-2
5.6	Spill Prevention and Control.....	5-3
5.7	Spill Prevention	5-3
5.8	Spill Containment and Control	5-3
5.9	Spill Cleanup and Removal	5-4
6.0	Quality Control Plan.....	6-1
6.1	Project QC Manager.....	6-1
6.2	Testing Requirements.....	6-1
6.2.1	Environmental.....	6-1
6.3	Construction Inspection.....	6-1
6.3.1	Pre-Excavation Waste Characterization and Backfill Sampling.....	6-4
6.3.2	Mobilization/Site Preparation.....	6-5
6.3.3	Soil Excavation and Backfill	6-5
6.3.4	Soil Confirmation Sampling	6-7
6.3.5	Waste Management	6-8
6.3.6	Demobilization	6-8
7.0	References	7-1

Tables

1-1	North DRMO Land Sliver Data Summary
1-2	South DRMO Land Sliver Data Summary
1-3	BEQ Data Summary
1-4	SPLP Data Summary
3-1	Data Quality Levels
3-2	Confirmation Sampling, Waste Characterization, and Backfill Sampling and Analytical Summary
6-1	Roles, Responsibilities, and Authorities of Key Project Personnel

Figures

- 1-1 Site Location Map
- 1-2 Site Layout Map
- 1-3 Removal Action Areas
- 1-4 Soil Exceedances in North DRMO Land Sliver
- 1-5 Soil Exceedances in South DRMO Land Sliver
- 2-1 Excavation Based on Residential Criteria in North DRMO Land Sliver
- 2-2 Excavation Based on Residential Criteria in South DRMO Land Sliver
- 2-3 Excavation of S-21 Based on Residential Criteria in South DRMO Land Sliver
- 2-4 Confirmation Sample Locations, North DRMO Land Sliver
- 2-5 Confirmation Sample Locations, South DRMO Land Sliver
- 2-6 Traffic Route Map
- 2-7 Laydown Area - North DRMO Land Sliver
- 2-8 Laydown Area - South DRMO Land Sliver

- 6-1 Project Organization Chart

Appendixes

- A Accident Prevention Plan
- B Quality Control Attachments

Acronyms and Abbreviations

AFCEE	Air Force Center for Engineering and the Environment
AGVIQ-CH2M HILL	AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III
AHA	Activity Hazard Analysis
AM	Action Memorandum
APP	Accident Prevention Plan
BEQ	benzo(a)pyrene equivalent
bls	below land surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	chemical of concern
DFOW	definable feature of work
DOT	U.S. Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FEAD	Facilities Engineering Acquisition Division
ft ²	square feet
GPS	geographic positioning system
GRBCA	global risk-based corrective action
HAZWOPER	Hazardous Waste Operations and Emergency Response
ID	identification
LDR	Land Disposal Restriction
mg/kg	milligrams per kilogram
NAS	Naval Air Station
NAVFAC SE	Naval Facilities Engineering Command Southeast
NFA	No Further Action
NRC	National Response Center
NTCRA	non-time critical removal action
NTR	Navy's Technical Representative
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PAH	polycyclic aromatic hydrocarbon
PARCC	precision, accuracy, representativeness, completeness and comparability
PCB	polychlorinated biphenyl
PPE	personal protective equipment
PWD	Public Works Department
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act

RPM	Remedial Project Manager
SAP	Sampling and Analysis Plan
SCTL	soil cleanup target level
SHPO	State Historic Preservation Officer
SI	Site Investigation
SOP	Standard Operating Procedure
SPLP	Synthetic Precipitation Leaching Procedure
SVOC	semivolatile organic compound
T&D	transportation and disposal
TAT	turnaround time
TO	Task Order
TtNUS	Tetra Tech NUS, Inc.
UCL	upper confidence level
UFP-SAP	Uniform Federal Policy Sampling and Analysis Plan
USACE	U.S. Army Corps of Engineers
VOA	volatile organic aromatic
VOC	volatile organic compound
yd ³	cubic yards

1.0 Introduction

AGVIQ-CH2M HILL Constructors, Inc. Joint Venture III (AGVIQ-CH2M HILL) has been contracted by the Naval Facilities Engineering Command, Southeast (NAVFAC SE) to perform a non-time critical removal action (NTCRA) for lead-impacted surface soils at the two former Defense Reutilization Marketing Office (DRMO) land slivers at Naval Air Station (NAS) Key West on Truman Annex, Key West, Florida (Figures 1-1 and 1-2). This work is being performed under the terms and conditions of Contract Number N62470-08-D-1006, Task Order No. JM31.

An Engineering Evaluation/Cost Analysis (EE/CA) for the impacted soils was completed in May 2012 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (AGVIQ-CH2M HILL, 2012a). The Action Memorandum (AM) was completed in June 2012 (AGVIQ-CH2M HILL, 2012b). The selected remedy for this NTCRA includes excavation of soils impacted by lead, arsenic, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) to meet the Direct Exposure Residential soil cleanup target levels (SCTLs), in order to mitigate potential risk to human health and the environment. The purpose of this Work Plan is to outline the procedures to perform the excavation of impacted soil at the two DRMO land sliver sites identified in the EE/CA.

1.1 Site History

The project area consists of two slivers of land adjacent to the City-owned portion of the former DRMO at NAS Key West, Key West, Florida (Figure 1-1). The land slivers were once a contiguous part of the original fenced-in footprint of the DRMO property. As a result of the Base Realignment and Closure (BRAC) transfer action to the City of Key West, these two land slivers were retained by the Navy. Figure 1-2 presents the location of the land slivers. The former DRMO site is located on Truman Annex in Key West, Florida. The former DRMO site is approximately 6.25 acres in area and was used as a storage facility for new and used military equipment.

The function of the DRMO facility was to warehouse various types of equipment, parts, and electrical transformers within the fenced-in property for security purposes. Over time, contaminants were released to site surface soils. An elevated water storage tank was formerly located at the site and was removed in 2003. This elevated tank was historically painted with lead-based paints. When the tank was demolished, lead from chipped paint was released to the surrounding area. During a subsequent soil assessment and remediation project conducted in 2004, confirmation sampling identified presence of PCBs in soil at levels above the Florida Department of Environmental Protection (FDEP) Direct Exposure Residential SCTLs, thus PCBs were identified as an additional chemical of concern (COC) in the soil at the site. PCBs also were found in backfill material placed at the site as part of the 1999 interim removal action, which included portions of both the north and south land slivers adjacent to the City-owned portion of the DRMO. Figure 1-3 presents a summary of the soil removal actions at the DRMO to date.

In 2007 and 2009, further delineation of the extent of PCB- and lead-contaminated soil at the site was conducted and additional soil removal actions were performed on the City-owned portion of the former DRMO. These removal actions did not include the two slivers of land owned by the Navy. Therefore, the two land slivers are included under this NTCRA. The south land sliver is approximately 600 feet long by 25 feet wide; the north land sliver is approximately 200 feet long by 30 feet wide.

These two land slivers had levels of contaminants, specifically PCBs, PAHs, and some inorganic compounds (arsenic and lead) above the FDEP Residential and Direct Exposure Industrial SCTLs from Chapter 62-777 of the Florida Administrative Code (FAC, 2005).

1.2 Previous Investigations

The former DRMO has been investigated in the past and remediated through soil excavations on four occasions as part of the CERCLA Preliminary Assessment/Site Investigation (PA/SI) to address contamination as part of the property transfer under BRAC. The following summarizes the historical investigations:

- Brown & Root performed a SI for the DRMO area in 1998; however, no sampling was conducted (as documented in Tetra Tech NUS, Inc. [TtNUS], 1999a).
- TtNUS performed a Supplemental SI in 1998/1999, which included setting up 100-foot by 100-foot grids within the fenced-in portion of the former DRMO facility prior to any transfer actions associated with the BRAC. Surface and subsurface soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. The report recommended excavations be performed within the areas of the grid that showed exceedances of the COCs. The Supplemental SI also included confirmation sampling in association with Bechtel Environmental, Inc.'s Fast Track Soil Removals (Bechtel Environmental, Inc., 1999), including PCB sampling (TtNUS, 1999b).
- During a removal action from January 11 to April 16, 1999, Bechtel Environmental, Inc. excavated approximately 12,000 cubic yards (yd³) of contaminated soil from the DRMO, including portions of the land slivers (Bechtel Environmental, Inc., 1999). Figure 1-3 shows the removal areas from the 1999 excavation.
- A potable water tower was removed from eastern portion of the DRMO in 2003. TN & Associates performed soil excavations around the former location of the water tower in 2004 to remove lead-contaminated soil associated with the lead-based paint (Figure 1-3). In 2004, TtNUS collected additional samples around the hot spots associated with the water tower soil excavation, including the land slivers. COCs identified included lead, arsenic, and PCBs. The results were documented in TtNUS' Hot Spot Removal Technical Memorandum (TtNUS, 2005).
- In 2006, CH2M HILL set up 26, ¼-acre grids (100 feet by 100 feet) across the BRAC portion of the DRMO (not including the land slivers) and collected approximately 10 samples per grid. The intent was to assess PCB and lead contamination. Hot spots were identified for removal based on global risk-based corrective action (GRBCA) guidance from FDEP (average for lead and 95 percent upper confidence level [UCL] for PCBs).

Hot spots were also identified based on concentration at three times the FDEP Direct Exposure Residential SCTL (CH2M HILL, 2006).

- From January 29 to February 23, 2007, and in February 2009, CH2M HILL excavated a total of 4,402 tons of soil from within the limits of the former BRAC portion of the DRMO site (CH2M HILL, 2010). The land slivers located outside the fenced areas of the DRMO were not included in this removal action at the DRMO.
- In 2010 and 2011, AGVIQ-CH2M HILL collected soil samples from both the north and south DRMO land slivers, and analyzed them for arsenic, lead, PAHs, and PCBs. Samples exceeded the FDEP Direct Exposure Residential SCTLs for arsenic, lead, PAHs, and PCBs at both land slivers. PAHs were the only constituents identified as soil exceedances above the Direct Exposure Industrial SCTLs at the north land sliver, and PAH and PCB concentrations were above the Direct Exposure Industrial SCTLs in some soil samples from the south DRMO land sliver. Figures 1-4 and 1-5 present the soil exceedances at the north and south DRMO land slivers, respectively. Soil samples were also analyzed for lead, PAHs, and PCBs by the Synthetic Precipitation Leaching Procedure (SPLP) for potential for soil-to-groundwater leachability. None of the SPLP results exceeded the FDEP Groundwater Cleanup Target Levels (GCTLs) for Low Yield/Poor Quality. Tables 1-1 and 1-2 present the soil data from the north and south DRMO land slivers, respectively; Table 1-3 presents the benzo(a)pyrene equivalent (BEQ) soil data from the north and south DRMO land slivers and Table 1-4 presents the SPLP data from the south DRMO land sliver.

An EE/CA was completed in May 2012 to identify the objectives of the removal action, and to analyze the effectiveness, implementability, and cost of various alternatives that may satisfy these objectives. The removal action objectives for the DRMO land sliver sites are to:

- Mitigate potential unacceptable risk to human health and the environment posed by exposure to lead, arsenic, PCBs and PAHs in surface and subsurface soil by removing the contaminated soil to below FDEP Direct Exposure Residential SCTLs.
- Close the DRMO land sliver sites with a no further action (NFA) decision.

The EE/CA recommended excavation of lead, arsenic, PCB and PAH-impacted surface and subsurface soil and subsequent backfilling with clean soil to meet removal action objectives.

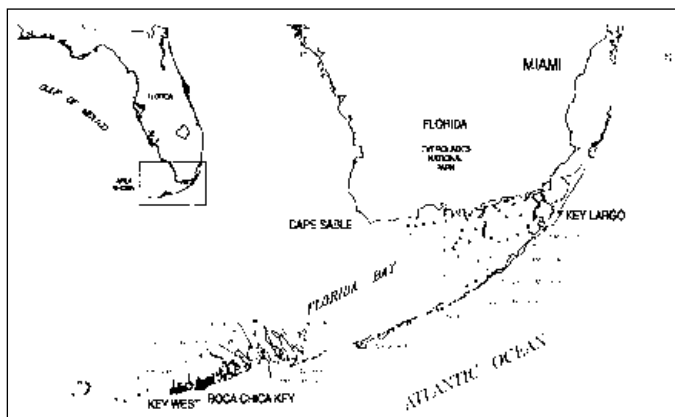
The results of the EE/CA are summarized in the AM completed in June 2012 as the primary decision document for this NTCRA (AGVIQ-CH2M HILL, 2012b).

1.3 Overview

The purpose of this Work Plan is to outline the procedures to be used to perform surface and subsurface soil removal at the DRMO land sliver sites based on the investigations completed to date as summarized above. Figures 1-4 and 15 show the extent of COCs in surface and subsurface soil for the north and south DRMO land sliver sites, respectively.

1.4 Project Objective

The primary objective of the remedial activities is to excavate, transport, and dispose of the soil contaminated with lead, arsenic, PCB and PAH at levels that exceed FDEP Direct Exposure Residential SCTLs.



GULF OF MEXICO

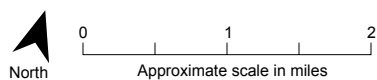
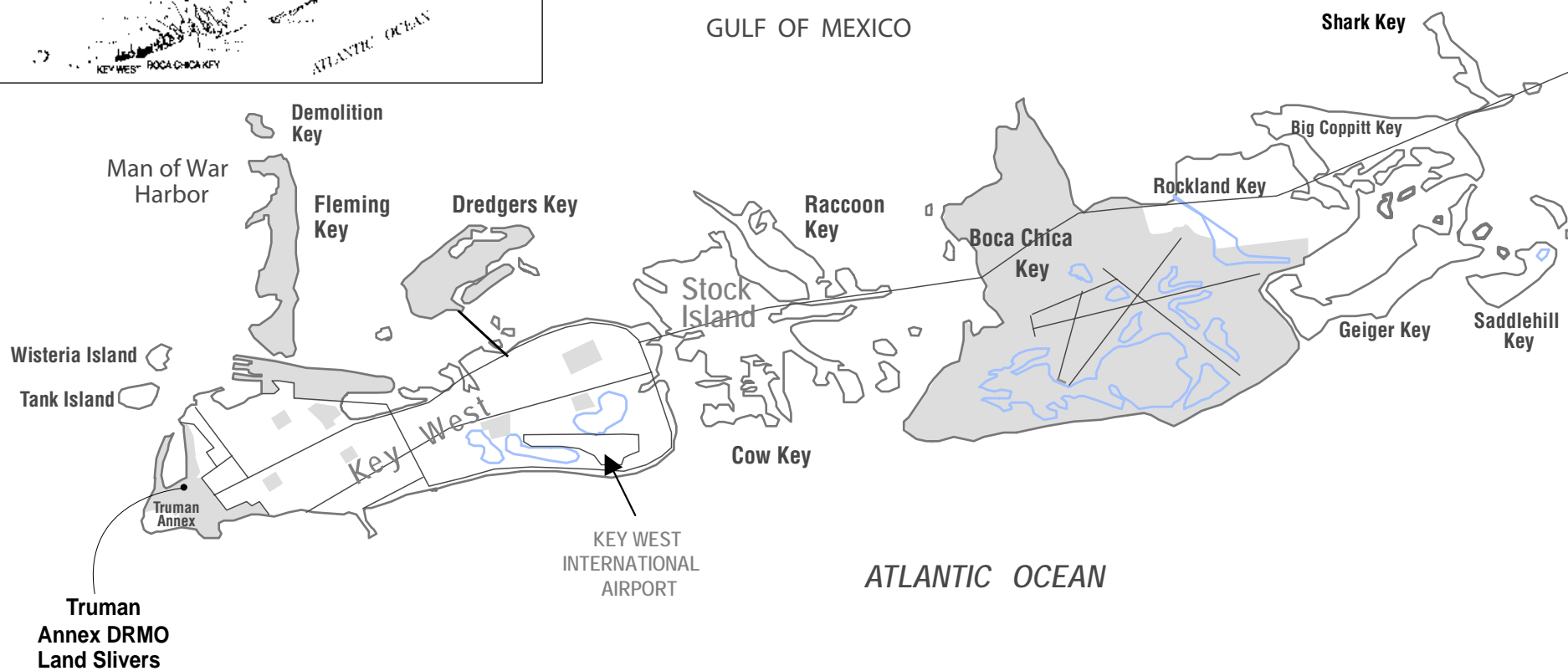
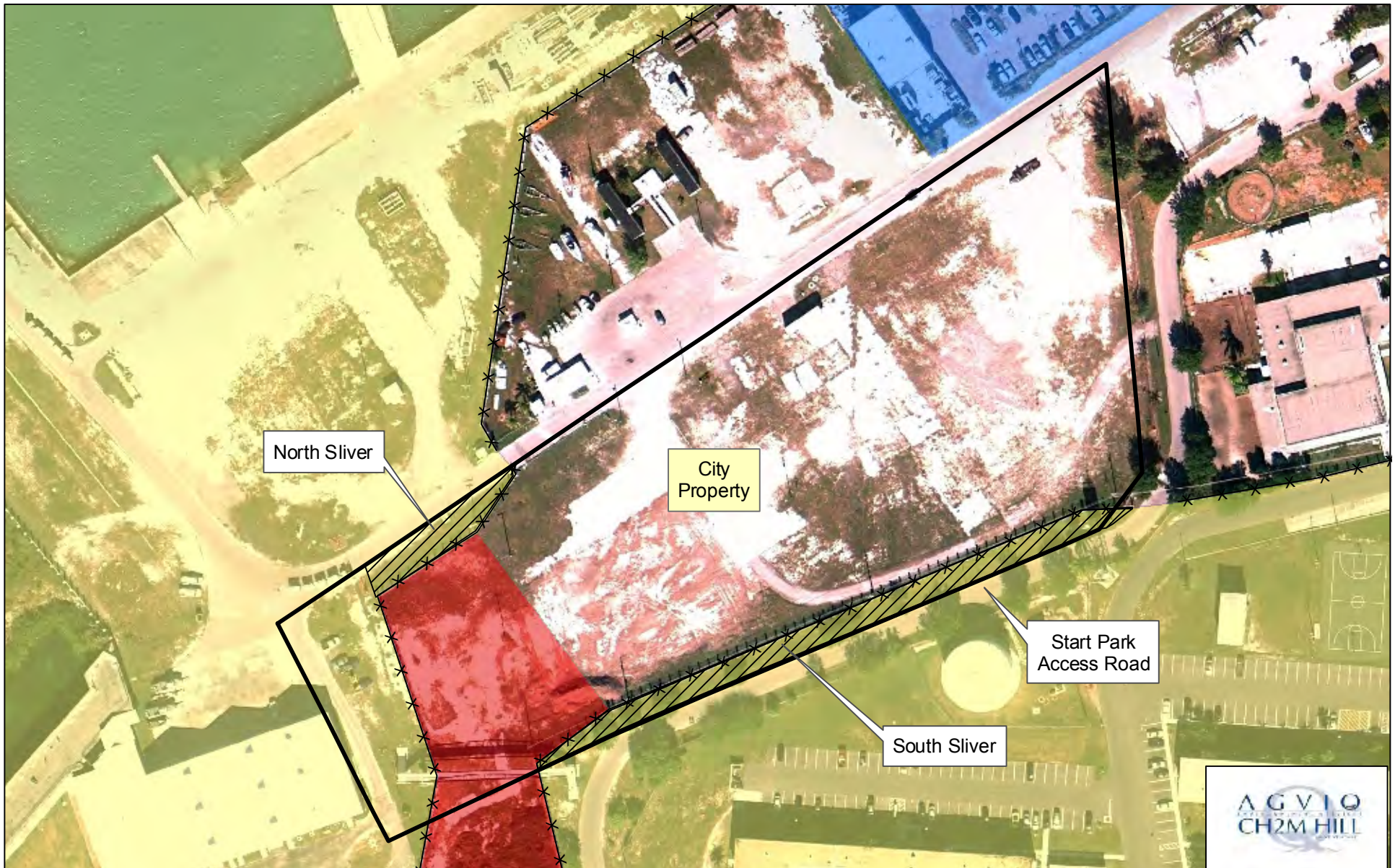


FIGURE 1-1
Site Location Map
Former Truman Annex DRMO Land Slivers
NAS Key West
Key West, Florida



Legend

- ✕ Aesthetically Pleasing Fence
- ▨ DRMO Sliver
- ▭ DRMO Facility Boundary
- Navy Property (approx.)
- State Park Property (approx.)
- NOAA Property (approx.)

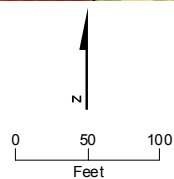


Figure 1-2
 Site Layout Map
 Former DRMO Slivers, Truman Annex
 NAS Key West
 Key West, Florida



Legend

- State Park Transfer
- NAS Key West Property
- DRMO Facility Boundary
- Fence
- Engineering Control Area (Excavated 2007)
- 1999 Excavation Area
- 2004 Excavation Area
- Hot Spot Area (Excavated 2007)
- 2007 Risk Based Excavation Area

Data Source for Property Boundaries: Tetra Tech NUS, Inc.

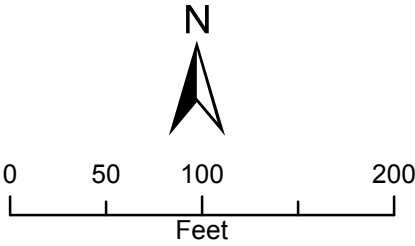


Figure 1-3
Removal Action Areas
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida



Figure 1-4
 Soil Exceedances in North DRMO Land Sliver
 Former DRMO Slivers, Truman Annex
 NAS Key West
 Key West, Florida

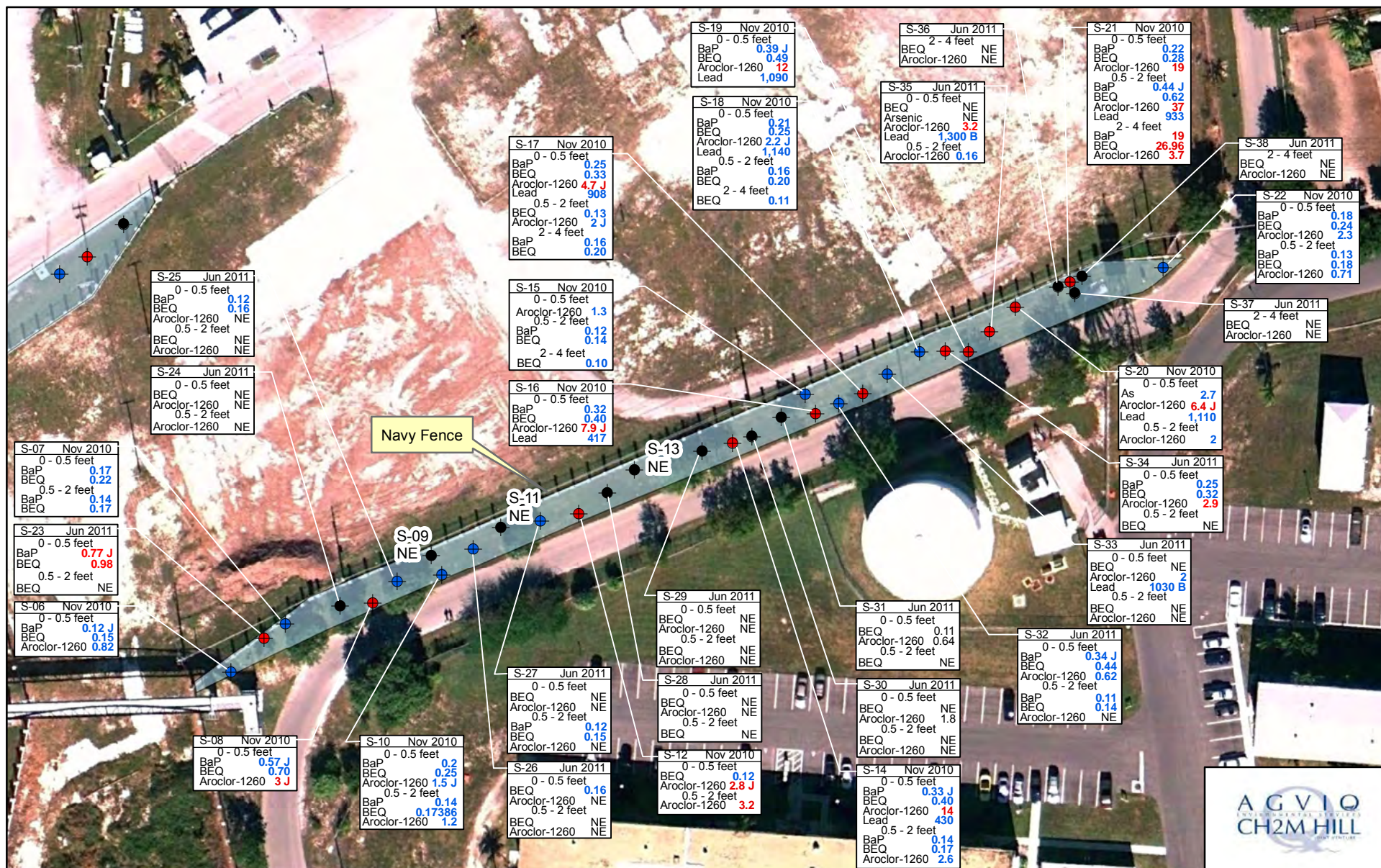


Figure 1-5
Soil Exceedances in South DRMO Land Sliver
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida

TABLE 1-1
North DRMO Land Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				N-SS-01		N-SS-02			N-SB-02	N-SS-03	
Sample ID				N-SS-01-(000.5)-111710	N-SS-01-(0.502)-111710	N-SS-02-(000.5)-111710	JM31-N-FD3-111710	N-SS-02-(0.502)-111710	N-SB-02-(0204)-111710	N-SS-03-(000.5)-111710	N-SS-03-(0.502)-111710
Sample Depth (ft)				0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}								
PAH (MG/KG)											
1-Methylnaphthalene	MG/KG	200	1800	0.01 J	0.012 U	0.018	0.023 J	0.009 U	0.0091 U	0.0086 U	0.0088 U
2-Methylnaphthalene	MG/KG	210	2100	0.0066 J	0.011 U	0.0086 U	0.0086 U	0.005 J	0.0087 U	0.0082 U	0.0084 U
Acenaphthene	MG/KG	2400	20000	0.008 J	0.009 U	0.0068 U	0.015 J	0.0068 U	0.0069 U	0.0065 U	0.0066 U
Acenaphthylene	MG/KG	1800	20000	0.011 U	0.011 U	0.0084 U	0.0098 J	0.0084 U	0.0085 U	0.008 U	0.0082 U
Anthracene	MG/KG	21000	300000	0.015	0.011 U	0.0046 J	0.076 J	0.0086 U	0.0087 U	0.0082 U	0.0084 U
Benzo(a)anthracene	MG/KG	--	--	0.086	0.014	0.033	0.63 J	0.065 J	0.0078 U	0.004 J	0.0075 U
Benzo(a)pyrene	MG/KG	0.1	0.7	0.069	0.014	0.047	0.48 J	0.28 J	0.0092 J	0.0072 J	0.0082 U
Benzo(b)fluoranthene	MG/KG	--	--	0.1	0.021	0.043	0.44 J	0.3 J	0.01 J	0.0097 J	0.0058 U
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.068	0.012 J	0.06	0.39 J	0.32	0.026	0.012	0.0071 U
Benzo(k)fluoranthene	MG/KG	--	--	0.037	0.0069 J	0.025	0.25 J	0.13 J	0.0071 U	0.005 J	0.0069 U
Chrysene	MG/KG	--	--	0.11	0.021	0.05	0.67 J	0.15 J	0.0054 J	0.0095 J	0.0054 U
Dibenz(a,h)anthracene	MG/KG	--	--	0.014	0.0096 U	0.0073 U	0.0073 U	0.0073 U	0.0074 U	0.0069 U	0.0071 U
Fluoranthene	MG/KG	3200	59000	0.3	0.05	0.086	1.2 J	0.094 J	0.0052 J	0.017	0.025
Fluorene	MG/KG	2600	33000	0.011 J	0.0084 U	0.0064 U	0.0064 U	0.011 J	0.0065 U	0.0061 U	0.0062 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.05	0.0091 J	0.041	0.24 J	0.19	0.012	0.0066 J	0.0069 U
Naphthalene	MG/KG	55	300	0.0075 U	0.0075 U	0.0057 U	0.0057 U	0.011 J	0.0058 U	0.0055 U	0.0056 U
Phenanthrene	MG/KG	2200	36000	0.094	0.011 J	0.021	0.29 J	0.0073 U	0.0074 U	0.0069 U	0.0071 U
Pyrene	MG/KG	2400	45000	0.16	0.027	0.057	1.1 J	0.055 J	0.0067 U	0.011	0.0041 J
SW6020 (MG/KG)											
Arsenic	MG/KG	2.1	12	2.9 J	0.44 U	0.54 U	0.52 U	0.51 U	NA	0.41 B	0.28 U
Lead	MG/KG	400	1400	93.7	62.3	16.1	7	6.8	NA	1.3	0.78
SW8082 (MG/KG)											
Aroclor-1016	MG/KG	0.5	2.6	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NA	0.022 U	0.022 U
Aroclor-1221	MG/KG	0.5	2.6	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	0.02 U	0.02 U
Aroclor-1232	MG/KG	0.5	2.6	0.035 U	0.035 U	0.035 U	0.035 U	0.036 U	NA	0.033 U	0.034 U
Aroclor-1242	MG/KG	0.5	2.6	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	NA	0.018 U	0.019 U
Aroclor-1248	MG/KG	0.5	2.6	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	NA	0.018 U	0.019 U
Aroclor-1254	MG/KG	0.5	2.6	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	NA	0.016 U	0.016 U
Aroclor-1260	MG/KG	0.5	2.6	0.63	0.042	0.14	0.011 U	0.011 U	NA	0.01 U	0.01 U

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-1
North DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				N-SS-04			N-SS-05		N-SB-05	N-SS-06	N-SS-07	N-SS-08	N-SS-09	N-SS-10
Sample ID				JM31-N-FD2-111710	N-SS-04-(000.5)-111710	N-SS-04-{0.502}-111710	N-SS-05-(000.5)-111710	N-SS-05-{0.502}-111710	N-SB-05-{0204}-111710	N-SS-06-0.502	N-SS-07-0.502	N-SS-08-000.5	N-SS-09-000.5	N-SS-10-0.502
Sample Depth (ft)				0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	2 - 4	0.5 - 2	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}											
PAH (MG/KG)														
1-Methylnaphthalene	MG/KG	200	1800	0.069 J	0.01 U	0.0092 U	0.0092 U	0.0091 U	0.0092 U	0.007 U	0.0068 U	0.036	0.48 J	0.0053 J
2-Methylnaphthalene	MG/KG	210	2100	0.0086 U	0.0097 U	0.0087 U	0.0087 U	0.0087 U	0.0088 U	0.0067 U	0.0064 U	0.0065 U	0.012 J	0.0066 U
Acenaphthene	MG/KG	2400	20000	0.13 J	0.0077 U	0.007 U	0.005 J	0.0069 U	0.007 U	0.0053 U	0.0051 U	0.003 J	0.018 J	0.0053 U
Acenaphthylene	MG/KG	1800	20000	0.0084 U	0.0094 U	0.0085 U	0.0085 U	0.0085 U	0.0086 U	0.0065 U	0.0041 J	0.0063 U	0.043 J	0.0065 U
Anthracene	MG/KG	21000	300000	0.053 J	0.033 J	0.0087 U	0.0056 J	0.0096 J	0.0088 U	0.0067 U	0.0064 U	0.0065 U	0.042 J	0.0066 U
Benzo(a)anthracene	MG/KG	--	--	0.99 J	0.034 J	0.039	0.043	0.066	0.018	0.006 U	0.03	0.085	1.6 J	0.019
Benzo(a)pyrene	MG/KG	0.1	0.7	0.71 J	0.21 J	0.057	0.069	0.08	0.031	0.0086	0.11	0.093	1 J	0.031
Benzo(b)fluoranthene	MG/KG	--	--	0.99 J	0.18 J	0.052	0.066	0.077	0.026	0.011	0.14	0.098	1.7 J	0.034
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.61 J	0.2 J	0.065	0.089	0.096	0.039	0.013	0.16	0.1	0.79 J	0.039
Benzo(k)fluoranthene	MG/KG	--	--	0.4 J	0.092 J	0.028	0.028	0.032	0.013	0.0036 J	0.045	0.041	0.53 J	0.015
Chrysene	MG/KG	--	--	1.2 J	0.33 J	0.057	0.076	0.085	0.026	0.0038 J	0.078	0.11	2.2 J	0.028
Dibenz(a,h)anthracene	MG/KG	--	--	0.0073 U	0.0082 U	0.0074 U	0.0074 U	0.0073 U	0.0074 U	0.0057 U	0.011	0.0055 U	0.066 J	0.0056 U
Fluoranthene	MG/KG	3200	59000	3.8 J	0.037 J	0.057	0.19	0.15	0.047	0.012	0.06	0.19	3.9 J	0.026
Fluorene	MG/KG	2600	33000	0.14 J	0.56 J	0.0065 U	0.0033 J	0.0064 U	0.0065 U	0.005 U	0.0052 J	0.018	0.091 J	0.0049 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.38 J	0.12 J	0.04	0.054	0.061	0.026	0.0086	0.086	0.088	0.56 J	0.024
Naphthalene	MG/KG	55	300	0.0057 U	0.0064 U	0.0081 J	0.0058 U	0.0058 U	0.0058 U	0.0027 J	0.0066 J	0.032	0.24 J	0.0089
Phenanthrene	MG/KG	2200	36000	1.7 J	0.0082 U	0.0077 J	0.045	0.055	0.018	0.0057 U	0.0046 J	0.054	0.2 J	0.008 J
Pyrene	MG/KG	2400	45000	2.7 J	0.0074 U	0.04	0.079	0.11	0.035	0.0052 J	0.037	0.15	3.2 J	0.019
SW6020 (MG/KG)														
Arsenic	MG/KG	2.1	12	0.41 U	0.33 U	0.44 U	0.86	0.88	NA	NA	NA	NA	NA	NA
Lead	MG/KG	400	1400	36 J	75.7 J	2.1	66.7	84.5	NA	NA	NA	NA	NA	NA
SW8082 (MG/KG)														
Aroclor-1016	MG/KG	0.5	2.6	0.022 U	0.025 U	0.023 U	0.023 U	0.023 U	NA	NA	NA	NA	NA	NA
Aroclor-1221	MG/KG	0.5	2.6	0.021 U	0.023 U	0.022 U	0.021 U	0.021 U	NA	NA	NA	NA	NA	NA
Aroclor-1232	MG/KG	0.5	2.6	0.035 U	0.039 U	0.036 U	0.036 U	0.036 U	NA	NA	NA	NA	NA	NA
Aroclor-1242	MG/KG	0.5	2.6	0.019 U	0.021 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	NA	NA
Aroclor-1248	MG/KG	0.5	2.6	0.019 U	0.021 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	NA	NA
Aroclor-1254	MG/KG	0.5	2.6	0.016 U	0.018 U	0.017 U	0.017 U	0.017 U	NA	NA	NA	NA	NA	NA
Aroclor-1260	MG/KG	0.5	2.6	0.99 J	0.17 J	0.011 U	0.33	0.011 U	NA	NA	NA	NA	NA	NA

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Land Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-06		S-SS-07		S-SB-07	S-SS-08		S-SS-09		
Sample ID				S-SS-06-(000.5)-111710	S-SS-06-(0.502)-111710	S-SS-07-(000.5)-111710	S-SS-07-(0.502)-111710	S-SB-07-(0204)-111710	S-SS-08-(000.5)-111710	S-SS-08-(0.502)-111710	JM31-S-FD4-111710	S-SS-09-(000.5)-111710	S-SS-09-(0.502)-111710
Sample Depth (ft)				0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}										
PAH (MG/KG)													
1-Methylnaphthalene	MG/KG	200	1800	0.0092 UJ	0.0093 UJ	0.013	0.0085 J	0.011	0.037 J	0.0091 U	0.0085 U	0.0085 U	0.0084 U
2-Methylnaphthalene	MG/KG	210	2100	0.0087 UJ	0.0088 UJ	0.0086 U	0.0085 U	0.012	0.014 J	0.0086 U	0.008 U	0.0081 U	0.011
Acenaphthene	MG/KG	2400	20000	0.0069 UJ	0.007 UJ	0.0042 J	0.0036 J	0.0059 U	0.042 J	0.0069 U	0.0064 U	0.0064 U	0.0064 U
Acenaphthylene	MG/KG	1800	20000	0.0085 UJ	0.0086 UJ	0.0052 J	0.0083 U	0.0047 J	0.016 J	0.0084 U	0.009 J	0.0079 U	0.0078 U
Anthracene	MG/KG	21000	300000	0.0087 UJ	0.0088 UJ	0.019	0.013	0.0091 J	0.072 J	0.0086 U	0.008 U	0.0081 U	0.008 U
Benzo(a)anthracene	MG/KG	--	--	0.05 J	0.0079 UJ	0.21	0.1	0.06	0.4 J	0.038	0.032	0.024	0.0064 J
Benzo(a)pyrene	MG/KG	0.1	0.7	0.12 J	0.0086 UJ	0.17	0.14	0.043	0.57 J	0.048	0.052	0.05	0.012
Benzo(b)fluoranthene	MG/KG	--	--	0.17 J	0.0061 UJ	0.14	0.1	0.049	0.39 J	0.041	0.043	0.044	0.016
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.0074 UJ	0.055 J	0.16	0.17	0.034	0.72 J	0.098	0.075	0.072	0.03
Benzo(k)fluoranthene	MG/KG	--	--	0.046 J	0.0073 UJ	0.074	0.051	0.019	0.22 J	0.023	0.02	0.019	0.0051 J
Chrysene	MG/KG	--	--	0.13 J	0.0057 UJ	0.25	0.14	0.076	0.62 J	0.06	0.051	0.049	0.01
Dibenz(a,h)anthracene	MG/KG	--	--	0.0074 UJ	0.0075 UJ	0.0073 U	0.0072 U	0.0063 U	0.0072 U	0.0073 U	0.0068 U	0.0069 U	0.0068 U
Fluoranthene	MG/KG	3200	59000	0.24 J	0.0069 J	0.36	0.24	0.14	1 J	0.13	0.075	0.072	0.018
Fluorene	MG/KG	2600	33000	0.016 J	0.0066 UJ	0.019	0.015	0.021	0.091 J	0.0064 U	0.0049 J	0.0042 J	0.006 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.0072 UJ	0.0073 UJ	0.098	0.094	0.024	0.43 J	0.035	0.041	0.038	0.011
Naphthalene	MG/KG	55	300	0.0058 UJ	0.0059 UJ	0.0057 U	0.0057 U	0.015	0.0057 U	0.023	0.0054 U	0.0054 U	0.0053 U
Phenanthrene	MG/KG	2200	36000	0.032 J	0.0038 J	0.1	0.065	0.052	0.28 J	0.027	0.012	0.011	0.0068 U
Pyrene	MG/KG	2400	45000	0.18 J	0.0074 J	0.33	0.16	0.11	0.69 J	0.061	0.052	0.046	0.011
SW6020 (MG/KG)													
Arsenic	MG/KG	2.1	12	0.42 U	0.36 U	0.44 J	0.61	NA	0.46 U	0.28 J	0.47	0.34 U	0.44 U
Lead	MG/KG	400	1400	6.4	8.7	116	186	NA	179	37.3	25 J	9 J	2.1
SW8082 (MG/KG)													
Aroclor-1016	MG/KG	0.5	2.6	0.023 U	0.024 U	0.023 U	0.023 U	NA	0.022 U	0.023 U	0.022 U	0.022 U	0.022 U
Aroclor-1221	MG/KG	0.5	2.6	0.021 U	0.022 U	0.021 U	0.021 U	NA	0.021 U	0.021 U	0.02 U	0.02 U	0.02 U
Aroclor-1232	MG/KG	0.5	2.6	0.035 U	0.037 U	0.035 U	0.035 U	NA	0.034 U	0.036 U	0.033 U	0.034 U	0.033 U
Aroclor-1242	MG/KG	0.5	2.6	0.019 U	0.02 U	0.019 U	0.019 U	NA	0.019 U	0.02 U	0.018 U	0.018 U	0.018 U
Aroclor-1248	MG/KG	0.5	2.6	0.019 U	0.02 U	0.019 U	0.019 U	NA	0.019 U	0.02 U	0.018 U	0.018 U	0.018 U
Aroclor-1254	MG/KG	0.5	2.6	0.017 U	0.017 U	0.017 U	0.016 U	NA	0.016 U	0.017 U	0.016 U	0.016 U	0.016 U
Aroclor-1260	MG/KG	0.5	2.6	0.82	0.011 U	0.44	0.48 J	NA	3 J	0.2	0.1	0.11	0.028

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-10		S-SB-10	S-SS-11		S-SS-12			S-SB-12
Sample ID				S-SS-10-(000.5)-111710	S-SS-10-(0.502)-111710	S-SB-10-(0204)-111710	S-SS-11-(000.5)-111710	S-SS-11-(0.502)-111710	S-SS-12-(000.5)-111710	JM31-S-FD5-111710	S-SS-12-(0.502)-111710	S-SB-12-(0204)-111710
Sample Depth (ft)				0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	2 - 4
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}									
PAH (MG/KG)												
1-Methylnaphthalene	MG/KG	200	1800	0.0091 U	0.0094 U	0.0076 U	0.0087 U	0.0088 U	0.019	0.0068 J	0.0091 U	NA
2-Methylnaphthalene	MG/KG	210	2100	0.0087 U	0.0046 J	0.0072 U	0.0083 U	0.0084 U	0.0089 U	0.0088 UJ	0.0086 U	NA
Acenaphthene	MG/KG	2400	20000	0.0068 J	0.0071 U	0.0057 U	0.0066 U	0.0067 U	0.007 U	0.007 UJ	0.0069 U	NA
Acenaphthylene	MG/KG	1800	20000	0.0052 J	0.0087 U	0.007 U	0.0081 U	0.0082 U	0.0086 U	0.0085 UJ	0.0084 U	NA
Anthracene	MG/KG	21000	300000	0.021	0.012	0.0072 U	0.0083 U	0.0084 U	0.037	0.016 J	0.0086 U	NA
Benzo(a)anthracene	MG/KG	--	--	0.14	0.09	0.014	0.0071 J	0.0052 J	0.18	0.1 J	0.021 J	NA
Benzo(a)pyrene	MG/KG	0.1	0.7	0.2	0.14	0.04	0.011	0.013	0.085	0.2 J	0.024 J	NA
Benzo(b)fluoranthene	MG/KG	--	--	0.15	0.094	0.034	0.01 J	0.015	0.12	0.19 J	0.028 J	NA
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.3	0.26	0.07	0.016	0.019	0.045	0.16 J	0.025 J	NA
Benzo(k)fluoranthene	MG/KG	--	--	0.08	0.053	0.014	0.0049 J	0.0047 J	0.048	0.087 J	0.009 J	NA
Chrysene	MG/KG	--	--	0.2	0.13	0.03	0.011	0.01 J	0.2	0.2 J	0.037 J	NA
Dibenz(a,h)anthracene	MG/KG	--	--	0.0073 U	0.0076 U	0.0061 U	0.007 U	0.0071 U	0.0075 U	0.0074 UJ	0.0073 U	NA
Fluoranthene	MG/KG	3200	59000	0.33	0.23	0.032	0.021	0.011	0.56	0.3 J	0.053 J	NA
Fluorene	MG/KG	2600	33000	0.028	0.025	0.0054 U	0.0062 U	0.0062 U	0.032	0.021 J	0.0036 J	NA
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.15	0.11	0.034	0.0091 J	0.013	0.031	0.14 J	0.017 J	NA
Naphthalene	MG/KG	55	300	0.047	0.006 U	0.0048 U	0.0055 U	0.0056 U	0.0059 U	0.0058 UJ	0.0058 U	NA
Phenanthrene	MG/KG	2200	36000	0.083	0.035	0.0078 J	0.0094 J	0.0071 U	0.19	0.075 J	0.01 J	NA
Pyrene	MG/KG	2400	45000	0.22	0.13	0.021	0.014	0.0088 J	0.36	0.2 J	0.028 J	NA
SW6020 (MG/KG)												
Arsenic	MG/KG	2.1	12	0.53 U	0.83	NA	0.48 U	0.5 U	0.37	0.81 J	0.48 U	NA
Lead	MG/KG	400	1400	132	118	NA	6.7	7.9	110	143	117	NA
SW8082 (MG/KG)												
Aroclor-1016	MG/KG	0.5	2.6	0.023 U	0.024 U	0.024 U	0.022 U	0.022 U	0.023 U	0.024 U	0.023 UJ	0.025 U
Aroclor-1221	MG/KG	0.5	2.6	0.021 U	0.022 U	0.022 U	0.02 U	0.02 U	0.021 U	0.022 U	0.021 UJ	0.023 U
Aroclor-1232	MG/KG	0.5	2.6	0.036 U	0.037 U	0.036 U	0.034 U	0.034 U	0.036 U	0.036 U	0.035 UJ	0.039 U
Aroclor-1242	MG/KG	0.5	2.6	0.02 U	0.02 U	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 UJ	0.021 U
Aroclor-1248	MG/KG	0.5	2.6	0.02 U	0.02 U	0.02 U	0.019 U	0.02 J	0.02 U	0.02 U	0.019 UJ	0.021 U
Aroclor-1254	MG/KG	0.5	2.6	0.017 U	0.017 U	0.017 U	0.016 U	0.016 U	0.017 U	0.017 U	0.017 UJ	0.018 U
Aroclor-1260	MG/KG	0.5	2.6	1.5 J	1.2	0.037	0.01 U	0.01 U	2.8 J	3.4	3.2	0.067

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-13		S-SS-14			S-SB-14	S-SS-15		S-SB-15
Sample ID				S-SS-13-(000.5)-111710	S-SS-13-(0.502)-111710	JM31-S-FD6-111710	S-SS-14-(000.5)-111710	S-SS-14-(0.502)-111710	S-SB-14-(0204)-111710	S-SS-15-(000.5)-111710	S-SS-15-(0.502)-111710	S-SB-15-(0204)-111710
Sample Depth (ft)				0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}									
PAH (MG/KG)												
1-Methylnaphthalene	MG/KG	200	1800	0.0084 U	0.0083 U	0.02	0.023	0.01 J	0.0074 U	0.0061 J	0.0095 U	0.014
2-Methylnaphthalene	MG/KG	210	2100	0.008 U	0.0079 U	0.016 J	0.031 J	0.008 J	0.0071 U	0.0086 U	0.0053 J	0.016
Acenaphthene	MG/KG	2400	20000	0.0063 U	0.0063 U	0.0072 U	0.0071 U	0.0073 U	0.0056 U	0.0068 U	0.0072 U	0.0059 U
Acenaphthylene	MG/KG	1800	20000	0.0078 U	0.0077 U	0.0049 J	0.0048 J	0.0089 U	0.0069 U	0.0084 U	0.0088 U	0.0073 U
Anthracene	MG/KG	21000	300000	0.008 U	0.0079 U	0.017 J	0.03 J	0.0078 J	0.0071 U	0.0086 U	0.009 U	0.0075 U
Benzo(a)anthracene	MG/KG	--	--	0.0078 J	0.0071 U	0.18	0.23	0.07	0.011	0.023	0.011 J	0.014
Benzo(a)pyrene	MG/KG	0.1	0.7	0.016	0.0077 U	0.18 J	0.33 J	0.14	0.025	0.055	0.12	0.082
Benzo(b)fluoranthene	MG/KG	--	--	0.017	0.0055 U	0.17	0.23	0.079	0.024	0.11	0.093	0.059
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.027	0.0067 U	0.17 J	0.35 J	0.12	0.04	0.0073 U	0.18	0.15
Benzo(k)fluoranthene	MG/KG	--	--	0.007 J	0.0065 U	0.077 J	0.17 J	0.055	0.0098	0.027	0.052	0.018
Chrysene	MG/KG	--	--	0.015	0.005 U	0.26 J	0.38 J	0.18	0.022	0.11	0.048	0.028
Dibenz(a,h)anthracene	MG/KG	--	--	0.0067 U	0.0067 U	0.0077 U	0.0076 U	0.0077 U	0.006 U	0.0073 U	0.0077 U	0.0063 U
Fluoranthene	MG/KG	3200	59000	0.027	0.0079 U	0.52	0.67	0.28	0.043	0.12	0.056	0.028
Fluorene	MG/KG	2600	33000	0.0059 U	0.0059 U	0.0068 U	0.056 J	0.024	0.0053 U	0.012	0.0067 U	0.0056 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.018	0.0065 U	0.11 J	0.22 J	0.092	0.022	0.047	0.1	0.075
Naphthalene	MG/KG	55	300	0.01	0.0053 U	0.0061 U	0.006 U	0.0061 U	0.0047 U	0.0057 U	0.006 U	0.012
Phenanthrene	MG/KG	2200	36000	0.0067 U	0.0067 U	0.11 J	0.18 J	0.066	0.015	0.0083 J	0.0057 J	0.0068 J
Pyrene	MG/KG	2400	45000	0.02	0.0061 U	0.28	0.37	0.15	0.026	0.038	0.024	0.011
SW6020 (MG/KG)												
Arsenic	MG/KG	2.1	12	0.41 J	0.44	0.4 U	0.43 J	0.69	NA	0.56	0.29 U	NA
Lead	MG/KG	400	1400	13.1	0.86	432	430	272	NA	98	19.8	NA
SW8082 (MG/KG)												
Aroclor-1016	MG/KG	0.5	2.6	0.021 U	0.022 U	0.025 U	0.024 U	0.024 UJ	0.023 U	0.022 U	0.024 U	NA
Aroclor-1221	MG/KG	0.5	2.6	0.02 U	0.02 U	0.023 U	0.023 U	0.022 UJ	0.021 U	0.021 U	0.022 U	NA
Aroclor-1232	MG/KG	0.5	2.6	0.033 U	0.033 U	0.038 U	0.038 U	0.037 UJ	0.036 U	0.034 U	0.037 U	NA
Aroclor-1242	MG/KG	0.5	2.6	0.018 U	0.018 U	0.021 U	0.021 U	0.02 UJ	0.02 U	0.019 U	0.02 U	NA
Aroclor-1248	MG/KG	0.5	2.6	0.018 U	0.018 U	0.021 U	0.021 U	0.02 UJ	0.02 U	0.019 U	0.02 U	NA
Aroclor-1254	MG/KG	0.5	2.6	0.016 U	0.016 U	0.018 U	0.018 U	0.018 UJ	0.017 U	0.016 U	0.018 U	NA
Aroclor-1260	MG/KG	0.5	2.6	0.061	0.01 U	12 J	14	2.6	0.31	1.3	0.025 J	NA

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-16		S-SS-17			S-SB-17	S-SS-18		S-SB-18
Sample ID				S-SS-16-(000.5)-111710	S-SS-16-(0.502)-111710	S-SS-17-(000.5)-111710	JM31-S-FD7-111710	S-SS-17-(0.502)-111710	S-SB-17-(0204)-111710	S-SS-18-(000.5)-111710	S-SS-18-(0.502)-111710	S-SB-18-(0204)-111710
Sample Depth (ft)				0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}									
PAH (MG/KG)												
1-Methylnaphthalene	MG/KG	200	1800	0.036	0.0095 U	0.028	0.015 J	0.0094 U	0.017	0.0068 J	0.0094 U	0.011 U
2-Methylnaphthalene	MG/KG	210	2100	0.02	0.009 U	0.0092 U	0.016 J	0.0051 J	0.019	0.0088 U	0.009 U	0.01 U
Acenaphthene	MG/KG	2400	20000	0.053	0.0072 U	0.029	0.0038 J	0.0071 U	0.0061 U	0.0099 J	0.0071 U	0.008 U
Acenaphthylene	MG/KG	1800	20000	0.0089 U	0.0088 U	0.009 U	0.009 U	0.0087 U	0.0062 J	0.0086 U	0.0088 U	0.0099 U
Anthracene	MG/KG	21000	300000	0.082	0.009 U	0.038	0.007 J	0.0053 J	0.006 J	0.012	0.009 U	0.0055 J
Benzo(a)anthracene	MG/KG	--	--	0.28	0.046	0.21	0.12	0.1	0.13	0.11	0.086	0.045
Benzo(a)pyrene	MG/KG	0.1	0.7	0.32	0.062	0.25	0.13	0.096	0.16	0.21	0.16	0.087
Benzo(b)fluoranthene	MG/KG	--	--	0.31	0.071	0.3	0.12	0.088	0.13	0.16	0.12	0.081
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.34	0.087	0.25	0.17	0.14	0.21	0.19	0.2	0.14
Benzo(k)fluoranthene	MG/KG	--	--	0.12	0.027	0.11	0.075 J	0.045 J	0.072	0.074	0.05	0.036
Chrysene	MG/KG	--	--	0.33	0.068	0.36	0.19	0.16	0.16	0.18	0.13	0.077
Dibenz(a,h)anthracene	MG/KG	--	--	0.0078 U	0.0076 U	0.0078 U	0.0078 U	0.0076 U	0.0065 U	0.0075 U	0.0076 U	0.0086 U
Fluoranthene	MG/KG	3200	59000	0.61	0.079	0.67	0.27 J	0.19 J	0.24	0.3	0.085	0.08
Fluorene	MG/KG	2600	33000	0.044	0.0067 U	0.0069 U	0.0069 U	0.0066 U	0.0057 U	0.0066 U	0.0067 U	0.0075 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.2	0.049	0.2	0.12	0.091	0.12	0.12	0.1	0.065
Naphthalene	MG/KG	55	300	0.0061 U	0.006 U	1.2	0.31	0.23	0.029	0.0059 U	0.006 U	0.0068 U
Phenanthrene	MG/KG	2200	36000	0.32	0.019	0.23	0.075 J	0.05 J	0.068	0.062	0.013	0.024
Pyrene	MG/KG	2400	45000	0.41	0.06	0.39	0.18 J	0.12 J	0.19	0.18	0.064	0.053
SW6020 (MG/KG)												
Arsenic	MG/KG	2.1	12	0.55 U	0.51 U	2	0.63 J	0.49 U	NA	0.63	0.42 U	NA
Lead	MG/KG	400	1400	417	17.4	908	63 J	128 J	NA	1140	11.3	NA
SW8082 (MG/KG)												
Aroclor-1016	MG/KG	0.5	2.6	0.025 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U	0.029 U	0.03 U	NA
Aroclor-1221	MG/KG	0.5	2.6	0.023 U	0.022 U	0.022 U	0.023 U	0.023 U	0.023 U	0.027 U	0.028 U	NA
Aroclor-1232	MG/KG	0.5	2.6	0.038 U	0.037 U	0.038 U	0.038 U	0.038 U	0.039 U	0.044 U	0.047 U	NA
Aroclor-1242	MG/KG	0.5	2.6	0.021 U	0.02 U	0.021 U	0.021 U	0.021 U	0.021 U	0.024 U	0.026 U	NA
Aroclor-1248	MG/KG	0.5	2.6	0.021 U	0.02 U	0.021 U	0.021 U	0.021 U	0.021 U	0.024 U	0.026 U	NA
Aroclor-1254	MG/KG	0.5	2.6	0.018 U	0.017 U	0.018 U	0.018 U	0.018 U	0.018 U	0.021 U	0.022 U	NA
Aroclor-1260	MG/KG	0.5	2.6	7.9 J	0.44	4.7 J	3.2 J	2 J	0.2	2.2 J	0.06	NA

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-19			S-SS-20		S-SB-20	S-SS-21		S-SB-21	S-SS-22	
Sample ID				JM31-S-FD8-111710	S-SS-19-(000.5)-111710	S-SS-19-(0.502)-111710	S-SS20-(000.5)-111710	S-SS20-(0.502)-111710	S-SB20-(0204)-111710	S-SS21-(000.5)-111710	S-SS21-(0.502)-111710	S-SB21-(0204)-111710	S-SS22-(000.5)-111710	S-SS22-(0.502)-111710
Sample Depth (ft)				0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Sample Date				11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}											
PAH (MG/KG)														
1-Methylnaphthalene	MG/KG	200	1800	0.19 J	0.046 J	0.0096 U	0.0085 J	0.009 U	NA	0.024	0.0092 U	2.4	0.0092 U	0.0093 U
2-Methylnaphthalene	MG/KG	210	2100	0.045 U	0.011 U	0.0092 U	0.013 J	0.0085 U	NA	0.0088 U	0.0088 U	0.044 U	0.59	0.0088 U
Acenaphthene	MG/KG	2400	20000	0.31 J	0.038 J	0.0073 U	0.0054 J	0.0068 U	NA	0.029	0.021 J	0.87	0.014	0.0075 J
Acenaphthylene	MG/KG	1800	20000	0.044 U	0.01 U	0.0089 U	0.008 U	0.0083 U	NA	0.0086 U	0.0085 U	0.043 U	0.0085 U	0.0086 U
Anthracene	MG/KG	21000	300000	0.45 J	0.061 J	0.0092 U	0.012 J	0.0085 U	NA	0.08	0.12 J	3.5	0.024	0.038
Benzo(a)anthracene	MG/KG	--	--	1.5 J	0.34 J	0.013	0.073 J	0.0077 U	NA	0.28	0.64 J	25	0.13	0.14
Benzo(a)pyrene	MG/KG	0.1	0.7	1.3 J	0.39 J	0.017	0.067 J	0.0083 U	NA	0.22	0.44 J	19	0.18	0.13
Benzo(b)fluoranthene	MG/KG	--	--	1.5 J	0.32 J	0.02	0.063 J	0.0059 U	NA	0.19	0.39 J	20	0.2	0.12
Benzo(g,h,i)perylene	MG/KG	2500	52000	1.4 J	0.43 J	0.023	0.0069 U	0.0072 U	NA	0.17	0.43 J	14	0.2	0.12
Benzo(k)fluoranthene	MG/KG	--	--	0.54 J	0.18 J	0.0076 J	0.045 J	0.007 U	NA	0.078	0.17 J	8.7	0.069	0.045
Chrysene	MG/KG	--	--	2 J	0.58 J	0.028	0.14 J	0.0055 U	NA	0.3	0.74 J	26.3	0.22	0.19
Dibenz(a,h)anthracene	MG/KG	--	--	0.038 U	0.0091 U	0.0077 U	0.0069 UJ	0.0072 U	NA	0.0074 U	0.051 J	3	0.016	0.014
Fluoranthene	MG/KG	3200	59000	3.7 J	0.9 J	0.079	0.19 J	0.008 J	NA	0.48	1.4 J	38	0.38	0.32 J
Fluorene	MG/KG	2600	33000	0.31 J	0.076 J	0.0068 U	0.0061 U	0.0064 U	NA	0.07	0.0065 U	0.033 U	0.031	0.0066 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.72 J	0.24 J	0.013	0.046 J	0.007 U	NA	0.11	0.25 J	7.5	0.11	0.066
Naphthalene	MG/KG	55	300	1.1 J	0.0071 U	0.013	0.0055 U	0.0057 U	NA	0.0058 U	0.0058 U	0.03 U	0.23	0.0059 U
Phenanthrene	MG/KG	2200	36000	2.1 J	0.33 J	0.011 J	0.057 J	0.0072 U	NA	0.3	0.81 J	8.4	0.092	0.19 J
Pyrene	MG/KG	2400	45000	2.5 J	0.62 J	0.027	0.67 J	0.024	NA	0.34	1 J	32	0.22	0.24 J
SW6020 (MG/KG)														
Arsenic	MG/KG	2.1	12	40.7 J	0.52 U	0.34 U	2.7	0.4 U	NA	0.96	0.46 U	NA	0.51 U	0.35 J
Lead	MG/KG	400	1400	987	1090	23.7	1110	76.4	NA	134	933	190	252	52.6
SW8082 (MG/KG)														
Aroclor-1016	MG/KG	0.5	2.6	0.03 U	0.036 U	0.03 U	0.028 U	0.029 U	0.02 U	0.029 U	0.03 U	0.018 U	0.028 U	0.029 U
Aroclor-1221	MG/KG	0.5	2.6	0.028 U	0.033 U	0.028 U	0.026 U	0.027 U	0.018 U	0.027 U	0.027 U	0.017 U	0.026 U	0.027 U
Aroclor-1232	MG/KG	0.5	2.6	0.046 U	0.055 U	0.046 U	0.043 U	0.044 U	0.03 U	0.045 U	0.045 U	0.028 U	0.044 U	0.045 U
Aroclor-1242	MG/KG	0.5	2.6	0.025 U	0.03 U	0.025 U	0.024 U	0.024 U	0.017 U	0.024 U	0.025 U	0.015 U	0.024 U	0.025 U
Aroclor-1248	MG/KG	0.5	2.6	0.025 U	0.03 U	0.025 U	0.024 U	0.024 U	0.017 U	0.024 U	0.025 U	0.015 U	0.024 U	0.025 U
Aroclor-1254	MG/KG	0.5	2.6	0.022 U	0.026 U	0.022 U	0.02 U	0.021 U	0.014 U	0.021 U	0.022 U	0.013 U	0.021 U	0.021 U
Aroclor-1260	MG/KG	0.5	2.6	16	12	0.37	6.4 J	2	0.0093 U	19	37	3.7	2.3	0.71

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL^{1RES} - Soil Cleanup Target Level Residential.
SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}
Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}
Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}
Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}
Values Shaded Grey are hits that exceed the SCTL^{1IND}
Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SB-22	S-SS-23		S-SS-24			S-SS-25		S-SS-26		S-SS-27		S-SS-28		S-SS-29	
Sample ID				S-SB22-(0204)-111710	S-SS-23-000.5	S-SS-23-0.502	JM31-FD7-062311	S-SS-24-000.5	S-SS-24-0.502	S-SS-25-000.5	S-SS-25-0.502	S-SS-26-000.5	S-SS-26-0.502	S-SS-27-000.5	S-SS-27-0.502	S-SS-28-000.5	S-SS-28-0.502	S-SS-29-000.5	S-SS-29-0.502
Sample Depth (ft)				2 - 4	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
Sample Date				11/17/2010	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}																
PAH (MG/KG)																			
1-Methylnaphthalene	MG/KG	200	1800	0.0075 J	0.34 J	0.0093	0.012	0.014	0.0082 J	0.0068 U	0.007 U	0.032	0.0068 U	0.015	0.0099	0.0068 U	NA	0.0067 U	0.0081 U
2-Methylnaphthalene	MG/KG	210	2100	0.0051 J	0.026 J	0.007 U	0.0064 U	0.0062 U	0.0051 J	0.0065 U	0.0067 U	0.0063 U	0.0065 U	0.0065 U	0.0077 U	0.0064 U	NA	0.0063 U	0.0077 U
Acenaphthene	MG/KG	2400	20000	0.007 U	0.026 J	0.0056 U	0.0051 U	0.0049 U	0.0055 U	0.0051 U	0.0053 U	0.003 J	0.0051 U	0.0052 U	0.0061 U	0.0051 U	NA	0.005 U	0.0061 U
Acenaphthylene	MG/KG	1800	20000	0.0086 U	0.02 J	0.0069 U	0.0054 J	0.0049 J	0.0067 U	0.068	0.0065 U	0.0061 U	0.0063 U	0.0064 U	0.0042 J	0.0062 U	NA	0.0062 U	0.0075 U
Anthracene	MG/KG	21000	300000	0.0089 U	0.1 J	0.007 U	0.0064 U	0.0062 U	0.0069 U	0.013	0.0067 U	0.0097	0.0065 U	0.0048 J	0.0046 J	0.0064 U	NA	0.0063 U	0.0077 U
Benzo(a)anthracene	MG/KG	--	--	0.056	0.6 J	0.013	0.0069 J	0.02 J	0.012	0.095	0.006 U	0.063	0.0058 U	0.028	0.02	0.0058 U	NA	0.0057 U	0.0069 U
Benzo(a)pyrene	MG/KG	0.1	0.7	0.065	0.77 J	0.048	0.024	0.029	0.031	0.12	0.0065 U	0.1	0.0063 U	0.047	0.12	0.0062 U	NA	0.0088	0.0082 J
Benzo(b)fluoranthene	MG/KG	--	--	0.048	0.76 J	0.029	0.021 J	0.029 J	0.032	0.12	0.0046 U	0.096	0.0045 U	0.048	0.14	0.0044 U	NA	0.01	0.0092 J
Benzo(g,h,i)perylene	MG/KG	2500	52000	0.078	0.92 J	0.026	0.038	0.049	0.039	0.18	0.0057 U	0.12	0.0055 U	0.07	0.16	0.0054 U	NA	0.013	0.012
Benzo(k)fluoranthene	MG/KG	--	--	0.019	0.37 J	0.012	0.0097 J	0.014 J	0.012	0.048	0.0055 U	0.043	0.0053 U	0.02	0.058	0.0053 U	NA	0.0038 J	0.0063 U
Chrysene	MG/KG	--	--	0.077	0.94 J	0.028	0.017 J	0.034 J	0.025	0.12	0.0043 U	0.095	0.0041 U	0.041	0.083	0.0041 U	NA	0.0062 J	0.005 U
Dibenz(a,h)anthracene	MG/KG	--	--	0.0073 J	0.025 J	0.006 U	0.0054 U	0.0052 U	0.0058 U	0.0061 J	0.0057 U	0.0037 J	0.0055 U	0.0055 U	0.0059 J	0.0054 U	NA	0.0054 U	0.0065 U
Fluoranthene	MG/KG	3200	59000	0.076	1.5 J	0.044	0.059	0.055	0.027	0.19	0.0067 U	0.13	0.0065 U	0.07	0.046	0.0039 J	NA	0.012	0.0077 U
Fluorene	MG/KG	2600	33000	0.0066 U	0.075 J	0.0052 U	0.0048 U	0.0044 J	0.0027 J	0.0072 J	0.005 U	0.053	0.0048 U	0.0034 J	0.0046 J	0.0048 U	NA	0.0047 U	0.0057 U
Indeno(1,2,3-cd)pyrene	MG/KG	--	--	0.039	0.43 J	0.02	0.018	0.024	0.024	0.09	0.0055 U	0.069	0.0053 U	0.037	0.093	0.0027 J	NA	0.0076 J	0.0074 J
Naphthalene	MG/KG	55	300	0.013	0.3 J	0.0083 B	0.0084	0.0068 B	0.007 B	0.03	0.0047 B	0.019	0.0043 U	0.012	0.011	0.0043 U	NA	0.0044 J	0.0052 U
Phenanthrene	MG/KG	2200	36000	0.025	0.36 J	0.014	0.0099	0.011	0.0078 J	0.041	0.0057 U	0.038	0.0055 U	0.017	0.007 J	0.0054 U	NA	0.0028 J	0.0065 U
Pyrene	MG/KG	2400	45000	0.067	0.99 J	0.032	0.024 J	0.039 J	0.023	0.13	0.0052 U	0.095	0.005 U	0.049	0.03	0.0049 U	NA	0.0089	0.0059 U
SW6020 (MG/KG)																			
Arsenic	MG/KG	2.1	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	MG/KG	400	1400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW8082 (MG/KG)																			
Aroclor-1016	MG/KG	0.5	2.6	0.018 U	0.027 U	NA	0.026 U	0.026 U	NA	0.027 U	0.028 U	0.027 U	0.027 U	0.026 U	0.032 U	0.026 U	0.028 U	0.026 U	0.032 U
Aroclor-1221	MG/KG	0.5	2.6	0.017 U	0.025 U	NA	0.024 U	0.024 U	NA	0.025 U	0.026 U	0.025 U	0.025 U	0.024 U	0.029 U	0.024 U	0.025 U	0.024 U	0.03 U
Aroclor-1232	MG/KG	0.5	2.6	0.028 U	0.041 U	NA	0.04 U	0.04 U	NA	0.041 U	0.043 U	0.041 U	0.042 U	0.041 U	0.048 U	0.04 U	0.042 U	0.04 U	0.05 U
Aroclor-1242	MG/KG	0.5	2.6	0.015 U	0.023 U	NA	0.022 U	0.022 U	NA	0.023 U	0.024 U	0.022 U	0.023 U	0.022 U	0.027 U	0.022 U	0.023 U	0.022 U	0.027 U
Aroclor-1248	MG/KG	0.5	2.6	0.015 U	0.023 U	NA	0.022 U	0.022 U	NA	0.023 U	0.024 U	0.022 U	0.023 U	0.022 U	0.027 U	0.022 U	0.023 U	0.022 U	0.027 U
Aroclor-1254	MG/KG	0.5	2.6	0.013 U	0.02 U	NA	0.019 U	0.019 U	NA	0.02 U	0.02 U	0.019 U	0.02 U	0.019 U	0.023 U	0.019 U	0.02 U	0.019 U	0.024 U
Aroclor-1260	MG/KG	0.5	2.6	0.0085 U	4.8 J	NA	0.059 J	0.065 J	NA	0.28	0.013 U	0.15	0.013 U	0.17	0.015 U	0.039	0.013 U	0.09	0.015 U

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SS-30			S-SS-31		S-SS-32		S-SS-33		S-SS-34			S-SS-35		S-SB-31	S-SB-32	S-SB-33
Sample ID				JM31-FD6-062211	S-SS-30-000.5	S-SS-30-0.502	S-SS-31-000.5	S-SS-31-0.502	S-SS-32-000.5	S-SS-32-0.502	S-SS-33-000.5	S-SS-33-0.502	JM31-FD3-062211	S-SS-34-000.5	S-SS-34-0.502	S-SS-35-000.5	S-SS-35-0.502	S-SB-31-0204	S-SB-32-0204	S-SB-33-0204
Sample Depth (0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	2 - 4	2 - 4	2 - 4
Sample Date				6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}																	
PAH (MG/KG)																				
1-Methylnaphth	MG/KG	200	1800	0.011	0.014	0.041	0.026	0.0068 U	0.14 J	0.021	0.022	0.019	0.047 J	0.1 J	0.0092	0.084	NA	0.0049 J	0.0097 J	0.009 U
2-Methylnaphth	MG/KG	210	2100	0.0061 J	0.0089 J	0.085	0.006 J	0.0065 U	0.0065 U	0.0051 J	0.0081 J	0.0042 J	0.0078 J	0.015 J	0.0068 J	0.02	NA	0.0089 U	0.0079 U	0.0086 U
Acenaphthene	MG/KG	2400	20000	0.005 U	0.0052 U	0.0054 U	0.0039 J	0.0052 U	0.021 J	0.003 J	0.0039 J	0.0056 U	0.01 J	0.025 J	0.0054 U	0.01	NA	0.007 U	0.0063 U	0.0068 U
Acenaphthylene	MG/KG	1800	20000	0.0061 U	0.0064 U	0.0066 U	0.0063 U	0.0063 U	0.0063 U	0.0064 J	0.0063 U	0.0037 J	0.0065 U	0.0063 U	0.0066 U	0.007 J	NA	0.0086 U	0.0077 U	0.0084 U
Anthracene	MG/KG	21000	300000	0.0063 U	0.0065 U	0.0068 U	0.0065 U	0.0065 U	0.052 J	0.0072 U	0.0073 J	0.0071 U	0.0067 U	0.046 J	0.0068 U	0.037 J	NA	0.0089 U	0.0079 U	0.0086 U
Benzo(a)anthrac	MG/KG	--	--	0.017	0.022	0.0069 J	0.052	0.0058 U	0.33 J	0.049	0.033	0.043	0.1 J	0.21 J	0.0077 J	0.16	NA	0.013	0.018	0.0077 U
Benzo(a)pyrene	MG/KG	0.1	0.7	0.03	0.037	0.011	0.08	0.0063 U	0.34 J	0.11	0.072	0.074	0.12 J	0.25 J	0.038	0.15 J	NA	0.019	0.055	0.017
Benzo(b)fluoran	MG/KG	--	--	0.038	0.037	0.018	0.078	0.0045 U	0.38 J	0.15	0.086	0.085	0.14 J	0.27 J	0.029	0.2 J	NA	0.017	0.033	0.014
Benzo(g,h,i)per	MG/KG	2500	52000	0.04	0.044	0.025	0.098	0.0055 U	0.32 J	0.12	0.091	0.1	0.14 J	0.25 J	0.04	0.13	NA	0.018	0.04	0.014
Benzo(k)fluoran	MG/KG	--	--	0.024	0.028	0.0093	0.033	0.0053 U	0.2 J	0.056	0.051	0.033	0.063 J	0.16 J	0.017	0.056 J	NA	0.0076 J	0.022	0.0073 J
Chrysene	MG/KG	--	--	0.028 J	0.044 J	0.029	0.091	0.0042 U	0.44 J	0.1	0.087	0.079	0.17 J	0.36 J	0.027	0.26	NA	0.018	0.03	0.011
Dibenz(a,h)anth	MG/KG	--	--	0.0053 U	0.0055 U	0.0057 U	0.0062 J	0.0055 U	0.0055 U	0.0061 U	0.0055 U	0.0064 J	0.0056 U	0.0055 U	0.0057 U	0.0056 U	NA	0.0075 U	0.0067 U	0.0073 U
Fluoranthene	MG/KG	3200	59000	0.056 J	0.081 J	0.026	0.13	0.0065 U	0.78 J	0.086	0.17	0.082	0.0067 U	1.2 J	0.041	0.96 J	NA	0.028	0.044	0.018
Fluorene	MG/KG	2600	33000	0.0047 U	0.0048 U	0.005 U	0.0044 J	0.0048 U	0.0048 U	0.0054 U	0.0048 U	0.0043 J	0.018 J	0.035 J	0.005 U	0.014	NA	0.0066 U	0.0059 U	0.0064 U
Indeno(1,2,3-cd	MG/KG	--	--	0.024	0.025	0.026	0.056	0.0053 U	0.21 J	0.069	0.038	0.053	0.091 J	0.16 J	0.017	0.083	NA	0.012	0.026	0.01 J
Naphthalene	MG/KG	55	300	0.025	0.026	0.091	0.027	0.0043 U	0.24 J	0.015	0.03	0.018	0.052 J	0.11 J	0.0083 J	0.084	NA	0.0033 J	0.0078 J	0.0046 J
Phenanthrene	MG/KG	2200	36000	0.017	0.021	0.023	0.029	0.0055 U	0.24 J	0.022	0.033	0.021	0.088 J	0.18 J	0.012	0.17 J	NA	0.0053 J	0.013	0.0046 J
Pyrene	MG/KG	2400	45000	0.029 J	0.047 J	0.016	0.082	0.005 U	0.52 J	0.067	0.08	0.065	0.17 J	0.38 J	0.026	0.27 J	NA	0.02	0.032	0.018
SW6020 (MG/KG)																				
Arsenic	MG/KG	2.1	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.2 JB	1.4 JB	NA	1.4	NA	NA	NA	NA
Lead	MG/KG	400	1400	NA	NA	NA	NA	NA	NA	NA	1030 B	NA	3320 JB	1580 JB	NA	1300 B	NA	NA	NA	NA
SW8082 (MG/KG)																				
Aroclor-1016	MG/KG	0.5	2.6	0.027 U	0.027 U	0.028 U	0.027 U	NA	0.016 U	0.018 U	0.016 U	0.018 U	0.017 U	0.017 U	NA	0.017 U	0.039	NA	NA	NA
Aroclor-1221	MG/KG	0.5	2.6	0.025 U	0.025 U	0.026 U	0.025 U	NA	0.015 U	0.017 U	0.015 U	0.017 U	0.016 U	0.015 U	NA	0.016 U	0.017 U	NA	NA	NA
Aroclor-1232	MG/KG	0.5	2.6	0.041 U	0.042 U	0.043 U	0.041 U	NA	0.025 U	0.028 U	0.025 U	0.028 U	0.026 U	0.026 U	NA	0.026 U	0.029 U	NA	NA	NA
Aroclor-1242	MG/KG	0.5	2.6	0.023 U	0.023 U	0.024 U	0.023 U	NA	0.014 U	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	NA	0.014 U	0.016 U	NA	NA	NA
Aroclor-1248	MG/KG	0.5	2.6	0.023 U	0.023 U	0.024 U	0.023 U	NA	0.014 U	0.016 U	0.014 U	0.015 U	0.014 U	0.014 U	NA	0.014 U	0.016 U	NA	NA	NA
Aroclor-1254	MG/KG	0.5	2.6	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	NA	0.012 U	0.014 U	NA	NA	NA
Aroclor-1260	MG/KG	0.5	2.6	1.6	1.8	0.34 J	0.64	NA	0.62	0.036	2	0.0078 J	2.9	3.2	NA	3.2 J	0.088	NA	NA	NA

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-2
South DRMO Sliver Data Summary
DRMO Land Slivers, NAS Key West

Location				S-SB-34		S-SB-36	S-SB-37	S-SB-38
Sample ID				JM31-FD4-062211	S-SB-34-0204	S-SB-36-0204	S-SB-37-0204	S-SB-38-0204
Sample Depth				2 - 4	2 - 4	2 - 4	2 - 4	2 - 4
Sample Date				6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Analyte	Units	SCTL ^{1RES}	SCTL ^{1IND}					
PAH (MG/KG)								
1-Methylnapht	MG/KG	200	1800	0.0079 J	0.013 J	0.0095 U	0.0059 J	0.048
2-Methylnapht	MG/KG	210	2100	0.005 J	0.007 J	0.009 U	0.0074 U	0.022
Acenaphthene	MG/KG	2400	20000	0.0062 U	0.0064 U	0.0072 U	0.0059 U	0.0097 J
Acenaphthylene	MG/KG	1800	20000	0.0076 U	0.0078 U	0.0088 U	0.0072 U	0.0046 J
Anthracene	MG/KG	21000	300000	0.0078 U	0.008 U	0.009 U	0.0074 U	0.026
Benzo(a)anthra	MG/KG	--	--	0.016	0.014	0.0081 U	0.015	0.083
Benzo(a)pyrene	MG/KG	0.1	0.7	0.026 J	0.044 J	0.0088 U	0.014	0.07
Benzo(b)fluora	MG/KG	--	--	0.018 J	0.044 J	0.0062 U	0.012	0.051
Benzo(g,h,i)per	MG/KG	2500	52000	0.023 J	0.046 J	0.0076 U	0.014	0.067
Benzo(k)fluora	MG/KG	--	--	0.0088 J	0.016 J	0.0074 U	0.0054 J	0.024
Chrysene	MG/KG	--	--	0.017 J	0.034 J	0.0058 U	0.024	0.1
Dibenz(a,h)ant	MG/KG	--	--	0.0066 U	0.0068 U	0.0076 U	0.0063 U	0.0084 J
Fluoranthene	MG/KG	3200	59000	0.031 J	0.057 J	0.009 U	0.032	0.19
Fluorene	MG/KG	2600	33000	0.0058 U	0.0043 J	0.0067 U	0.0055 U	0.012
Indeno(1,2,3-cd	MG/KG	--	--	0.016 J	0.028 J	0.0074 U	0.01	0.05
Naphthalene	MG/KG	55	300	0.0056 J	0.014 J	0.0034 J	0.0065 J	0.046
Phenanthrene	MG/KG	2200	36000	0.012 J	0.02 J	0.0076 U	0.015	0.15
Pyrene	MG/KG	2400	45000	0.023 J	0.034 J	0.0069 U	0.025	0.14
SW6020 (MG/KG)								
Arsenic	MG/KG	2.1	12	NA	NA	NA	NA	NA
Lead	MG/KG	400	1400	NA	NA	NA	NA	NA
SW8082 (MG/KG)								
Aroclor-1016	MG/KG	0.5	2.6	NA	NA	0.038 U	0.03 U	0.032 U
Aroclor-1221	MG/KG	0.5	2.6	NA	NA	0.035 U	0.028 U	0.03 U
Aroclor-1232	MG/KG	0.5	2.6	NA	NA	0.058 U	0.047 U	0.05 U
Aroclor-1242	MG/KG	0.5	2.6	NA	NA	0.032 U	0.026 U	0.027 U
Aroclor-1248	MG/KG	0.5	2.6	NA	NA	0.032 U	0.026 U	0.027 U
Aroclor-1254	MG/KG	0.5	2.6	NA	NA	0.027 U	0.022 U	0.024 U
Aroclor-1260	MG/KG	0.5	2.6	NA	NA	0.018 U	0.3	0.055

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1RES} - Soil Cleanup Target Level Residential.

SCTL^{1IND} - Soil Cleanup Target Level Industrial.

Values Bolded are analytes not detected by the Lab but are above the SCTL^{1RES}

Values Shaded Pale Yellow are analytes not detected by the Lab but are above the SCTL^{1IND}

Values Bolded and Shaded Pale Yellow are analytes not detected by the Lab but are above both SCTL^{1RES} and SCTL^{1IND}

Values Bold and Pale Blue are hits exceeding the SCTL^{1RES}

Values Shaded Grey are hits that exceed the SCTL^{1IND}

Values Bold and Shaded Grey are hits that exceed both SCTL^{1RES} and SCTL^{1IND}

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			N-SS-01	N-SS-01	N-SS-02	N-SS-02	N-SS-02	N-SB-02	N-SS-03	N-SS-03
SampleID			N-SS-01-(0_502)-111710	N-SS-01-(000_5)-111710	N-SS-02-(0_502)-111710	N-SS-02-(000_5)-111710	JM31-N-FD3-111710	N-SB-02-(0204)-111710	N-SS-03-(0_502)-111710	N-SS-03-(000_5)-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.0014	0.0086	0.0065 J	0.0033	0.063 J	0.00039 U	0.000375 U	0.0004 J
Benzo(a)pyrene	MG/KG		0.014	0.069	0.28 J	0.047	0.48 J	0.0092 J	0.0041 U	0.0072 J
Benzo(b)fluoranthene	MG/KG		0.0021	0.01	0.03 J	0.0043	0.044 J	0.001 J	0.00029 U	0.00097 J
Benzo(k)fluoranthene	MG/KG		0.000069 J	0.00037	0.0013 J	0.00025	0.0025 J	0.0000355 U	0.0000345 U	0.00005 J
Chrysene	MG/KG		0.000021	0.00011	0.00015 J	0.00005	0.00067 J	0.0000054 J	0.0000027 U	0.0000095 J
Dibenz(a,h)anthracene	MG/KG		0.0048 U	0.014	0.00365 U	0.00365 U	0.00365 U	0.0037 U	0.00355 U	0.00345 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.00091 J	0.005	0.019	0.0041	0.024 J	0.0012	0.000345 U	0.00066 J
Total BEQs			0.0233	0.10708	0.3406	0.06265	0.61782	0.0155309	0.0086972	0.0127395
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			NO	YES	YES	NO	YES	NO	NO	NO

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL^{1 IND} - Soil Cleanup Target Level

Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			N-SS-04	N-SS-04	N-SS-04	N-SS-05	N-SS-05	N-SB-05	N-SS-06	N-SS-07	N-SS-08
SampleID			N-SS-04-(0_502)-111710	N-SS-04-(000_5)-111710	JM31-N-FD2-111710	N-SS-05-(0_502)-111710	N-SS-05-(000_5)-111710	N-SB-05-(0204)-111710	N-SS-06-0.502	N-SS-07-0.502	N-SS-08-000.5
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	6/22/2011	6/22/2011	6/22/2011
Parameter	Units	SCTL									
SW8310											
Benzo(a)anthracene	MG/KG		0.0039	0.0034 J	0.099 J	0.0066	0.0043	0.0018	0.0003 U	0.003	0.0085
Benzo(a)pyrene	MG/KG		0.057	0.21 J	0.71 J	0.08	0.069	0.031	0.0086	0.11	0.093
Benzo(b)fluoranthene	MG/KG		0.0052	0.018 J	0.099 J	0.0077	0.0066	0.0026	0.0011	0.014	0.0098
Benzo(k)fluoranthene	MG/KG		0.00028	0.00092 J	0.004 J	0.00032	0.00028	0.00013	0.000036 J	0.00045	0.00041
Chrysene	MG/KG		0.000057	0.00033 J	0.0012 J	0.000085	0.000076	0.000026	0.0000038 J	0.000078	0.00011
Dibenz(a,h)anthracene	MG/KG		0.0037 U	0.0041 U	0.00365 U	0.00365 U	0.0037 U	0.0037 U	0.00285 U	0.011	0.00275 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.004	0.012 J	0.038 J	0.0061	0.0054	0.0026	0.00086	0.0086	0.0088
Total BEQs			0.074137	0.24875	0.95485	0.104455	0.089356	0.041856	0.0137498	0.147128	0.12337
	Industrial Exposure Limit	0.7									
SCTL Industrial Failure?			NO	NO	YES	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1									
SCTL Residential Failure?			NO	YES	YES	YES	NO	NO	NO	YES	YES

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL ^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			N-SS-09	N-SS-10	S-SS-06	S-SS-06	S-SS-07	S-SS-07	S-SB-07	S-SS-08	S-SS-08
SampleID			N-SS-09-000.5	N-SS-10-0.502	S-SS-06-(0_502)-111710	S-SS-06-(000_5)-111710	S-SS-07-(0_502)-111710	S-SS-07-(000_5)-111710	S-SB-07-(0204)-111710	S-SS-08-(0_502)-111710	S-SS-08-(000_5)-111710
Sample Date			6/22/2011	6/22/2011	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL									
SW8310											
ene	MG/KG		0.16 J	0.0019	0.000395 UJ	0.005 J	0.01	0.021	0.006	0.0038	0.04 J
Benzo(a)pyrene	MG/KG		1 J	0.031	0.0043 UJ	0.12 J	0.14	0.17	0.043	0.048	0.57 J
hene	MG/KG		0.17 J	0.0034	0.000305 UJ	0.017 J	0.01	0.014	0.0049	0.0041	0.039 J
hene	MG/KG		0.0053 J	0.00015	0.0000365 UJ	0.00046 J	0.00051	0.00074	0.00019	0.00023	0.0022 J
Chrysene	MG/KG		0.0022 J	0.000028	0.00000285 UJ	0.00013 J	0.00014	0.00025	0.000076	0.00006	0.00062 J
acene	MG/KG		0.066 J	0.0028 U	0.00375 UJ	0.0037 UJ	0.0036 U	0.00365 U	0.00315 U	0.00365 U	0.0036 U
cd)pyrene	MG/KG		0.056 J	0.0024	0.000365 UJ	0.00036 UJ	0.0094	0.0098	0.0024	0.0035	0.043 J
Total BEQs			1.4595	0.041678	0.00915435	0.14665	0.17365	0.21944	0.059716	0.06334	0.69842
	Industrial Exposure Limit	0.7									
SCTL Industrial Failure?			YES	NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1									
SCTL Residential Failure?			YES	NO	NO	YES	YES	YES	NO	NO	YES

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL ^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-09	S-SS-09	S-SS-09	S-SS-10	S-SS-10	S-SB-10	S-SS-11	S-SS-11
SampleID			S-SS-09-(0_502)-111710	S-SS-09-(000_5)-111710	JM31-S-FD4-111710	S-SS-10-(0_502)-111710	S-SS-10-(000_5)-111710	S-SB-10-(0204)-111710	S-SS-11-(0_502)-111710	S-SS-11-(000_5)-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.00064 J	0.0024	0.0032	0.009	0.014	0.0014	0.00052 J	0.00071 J
Benzo(a)pyrene	MG/KG		0.012	0.05	0.052	0.14	0.2	0.04	0.013	0.011
Benzo(b)fluoranthene	MG/KG		0.0016	0.0044	0.0043	0.0094	0.015	0.0034	0.0015	0.001 J
Benzo(k)fluoranthene	MG/KG		0.000051 J	0.00019	0.0002	0.00053	0.0008	0.00014	0.000047 J	0.000049 J
Chrysene	MG/KG		0.00001	0.000049	0.000051	0.00013	0.0002	0.00003	0.00001 J	0.000011
Dibenz(a,h)anthracene	MG/KG		0.0034 U	0.00345 U	0.0034 U	0.0038 U	0.00365 U	0.00305 U	0.00355 U	0.0035 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.0011	0.0038	0.0041	0.011	0.015	0.0034	0.0013	0.00091 J
Total BEQs			0.018801	0.064289	0.067251	0.17386	0.24865	0.05142	0.019927	0.01718
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			NO	NO	NO	YES	YES	NO	NO	NO

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL ^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-12	S-SS-12	S-SS-12	S-SS-13	S-SS-13	S-SS-14	S-SS-14	S-SS-14
SampleID			S-SS-12-(0_502)-111710	S-SS-12-(000_5)-111710	JM31-S-FD5-111710	S-SS-13-(0_502)-111710	S-SS-13-(000_5)-111710	S-SS-14-(0_502)-111710	S-SS-14-(000_5)-111710	JM31-S-FD6-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.0021 J	0.018	0.01 J	0.000355 U	0.00078 J	0.007	0.023	0.018
Benzo(a)pyrene	MG/KG		0.024 J	0.085	0.2 J	0.00385 U	0.016	0.14	0.33 J	0.18 J
Benzo(b)fluoranthene	MG/KG		0.0028 J	0.012	0.019 J	0.000275 U	0.0017	0.0079	0.023	0.017
Benzo(k)fluoranthene	MG/KG		0.00009 J	0.00048	0.00087 J	0.0000325 U	0.00007 J	0.00055	0.0017 J	0.00077 J
Chrysene	MG/KG		0.000037 J	0.0002	0.0002 J	0.0000025 U	0.000015	0.00018	0.00038 J	0.00026 J
Dibenz(a,h)anthracene	MG/KG		0.00365 U	0.00375 U	0.0037 UJ	0.00335 U	0.00335 U	0.00385 U	0.0038 U	0.00385 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.0017 J	0.0031	0.014 J	0.000325 U	0.0018	0.0092	0.022 J	0.011 J
Total BEQs			0.034377	0.12253	0.24777	0.00819	0.023715	0.16868	0.40388	0.23088
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			NO	YES	YES	NO	NO	YES	YES	YES

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SB-14	S-SS-15	S-SS-15	S-SB-15	S-SS-16	S-SS-16	S-SS-17	S-SS-17
SampleID			S-SB-14-(0204)-111710	S-SS-15-(0_502)-111710	S-SS-15-(000_5)-111710	S-SB-15-(0204)-111710	S-SS-16-(0_502)-111710	S-SS-16-(000_5)-111710	S-SS-17-(0_502)-111710	S-SS-17-(000_5)-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.0011	0.0011 J	0.0023	0.0014	0.0046	0.028	0.01	0.021
Benzo(a)pyrene	MG/KG		0.025	0.12	0.055	0.082	0.062	0.32	0.096	0.25
Benzo(b)fluoranthene	MG/KG		0.0024	0.0093	0.011	0.0059	0.0071	0.031	0.0088	0.03
Benzo(k)fluoranthene	MG/KG		0.000098	0.00052	0.00027	0.00018	0.00027	0.0012	0.00045 J	0.0011
Chrysene	MG/KG		0.000022	0.000048	0.00011	0.000028	0.000068	0.00033	0.00016	0.00036
Dibenz(a,h)anthracene	MG/KG		0.003 U	0.00385 U	0.00365 U	0.00315 U	0.0038 U	0.0039 U	0.0038 U	0.0039 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.0022	0.01	0.0047	0.0075	0.0049	0.02	0.0091	0.02
Total BEQs			0.03382	0.144818	0.07703	0.100158	0.082738	0.40443	0.12831	0.32636
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			NO	YES	NO	YES	NO	YES	YES	YES

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-17	S-SB-17	S-SS-18	S-SS-18	S-SB-18	S-SS-19	S-SS-19	S-SS-19
SampleID			JM31-S-FD7-111710	S-SB-17-(0204)-111710	S-SS-18-(0_502)-111710	S-SS-18-(000_5)-111710	S-SB-18-(0204)-111710	S-SS-19-(0_502)-111710	S-SS-19-(000_5)-111710	JM31-S-FD8-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.012	0.013	0.0086	0.011	0.0045	0.0013	0.034 J	0.15 J
Benzo(a)pyrene	MG/KG		0.13	0.16	0.16	0.21	0.087	0.017	0.39 J	1.3 J
Benzo(b)fluoranthene	MG/KG		0.012	0.013	0.012	0.016	0.0081	0.002	0.032 J	0.15 J
Benzo(k)fluoranthene	MG/KG		0.00075 J	0.00072	0.0005	0.00074	0.00036	0.000076 J	0.0018 J	0.0054 J
Chrysene	MG/KG		0.00019	0.00016	0.00013	0.00018	0.000077	0.000028	0.00058 J	0.002 J
Dibenz(a,h)anthracene	MG/KG		0.0039 U	0.00325 U	0.0038 U	0.00375 U	0.0043 U	0.00385 U	0.00455 U	0.019 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.012	0.012	0.01	0.012	0.0065	0.0013	0.024 J	0.072 J
Total BEQs			0.17084	0.20213	0.19503	0.25367	0.110837	0.025554	0.48693	1.6984
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	YES
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			YES	YES	YES	YES	YES	NO	YES	YES

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-20	S-SS-20	S-SS-21	S-SS-21	S-SB-21	S-SS-22	S-SS-22	S-SB-22
SampleID			S-SS20-(0_502)-111710	S-SS20-(000_5)-111710	S-SS21-(0_502)-111710	S-SS21-(000_5)-111710	S-SB21-(0204)-111710	S-SS22-(0_502)-111710	S-SS22-(000_5)-111710	S-SB22-(0204)-111710
Sample Date			11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Parameter	Units	SCTL								
SW8310										
Benzo(a)anthracene	MG/KG		0.000385 U	0.0073 J	0.064 J	0.028	2.5	0.014	0.013	0.0056
Benzo(a)pyrene	MG/KG		0.00415 U	0.067 J	0.44 J	0.22	19	0.13	0.18	0.065
Benzo(b)fluoranthene	MG/KG		0.000295 U	0.0063 J	0.039 J	0.019	2	0.012	0.02	0.0048
Benzo(k)fluoranthene	MG/KG		0.000035 U	0.00045 J	0.0017 J	0.00078	0.087	0.00045	0.00069	0.00019
Chrysene	MG/KG		0.00000275 U	0.00014 J	0.00074 J	0.0003	0.0263	0.00019	0.00022	0.000077
Dibenz(a,h)anthracene	MG/KG		0.0036 U	0.00345 UJ	0.051 J	0.0037 U	2.6	0.014	0.016	0.0073 J
Indeno(1,2,3-cd)pyrene	MG/KG		0.00035 U	0.0046 J	0.025 J	0.011	0.75	0.0066	0.011	0.0039
Total BEQs			0.00881775	0.08924	0.62144	0.28278	26.9633	0.17724	0.24091	0.086867
	Industrial Exposure Limit	0.7								
SCTL Industrial Failure?			NO	NO	NO	NO	YES	NO	NO	NO
	Residential Exposure Limit	0.1								
SCTL Residential Failure?			NO	NO	YES	YES	YES	YES	YES	NO

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-23	S-SS-23	S-SS-24	S-SS-24	S-SS-24	S-SS-25	S-SS-25	S-SS-26	S-SS-26	S-SS-27	S-SS-27	S-SS-28	S-SS-29
SampleID			S-SS-23-000.5	S-SS-23-0.502	JM31-FD7-062311	S-SS-24-000.5	S-SS-24-0.502	S-SS-25-000.5	S-SS-25-0.502	S-SS-26-000.5	S-SS-26-0.502	S-SS-27-000.5	S-SS-27-0.502	S-SS-28-000.5	S-SS-29-000.5
Sample Date			6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Parameter	Units	SCTL													
SW8310															
Benzo(a)anthracene	MG/KG		0.06 J	0.0013	0.00069 J	0.002 J	0.0012	0.0095	0.0003 U	0.0063	0.00029 U	0.0028	0.002	0.00029 U	0.000285 U
Benzo(a)pyrene	MG/KG		0.77 J	0.048	0.024	0.029	0.031	0.12	0.00325 U	0.1	0.00315 U	0.047	0.12	0.0031 U	0.0088
Benzo(b)fluoranthene	MG/KG		0.076 J	0.0029	0.0021 J	0.0029 J	0.0032	0.012	0.00023 U	0.0096	0.000225 U	0.0048	0.014	0.00022 U	0.001
Benzo(k)fluoranthene	MG/KG		0.0037 J	0.00012	0.000097 J	0.00014 J	0.00012	0.00048	0.0000275 U	0.00043	0.0000265 U	0.0002	0.00058	0.0000265 U	0.000038 J
Chrysene	MG/KG		0.00094 J	0.000028	0.000017 J	0.000034 J	0.000025	0.00012	0.00000215 U	0.000095	0.00000205 U	0.000041	0.000083	0.00000205 U	0.0000062 J
Dibenz(a,h)anthracene	MG/KG		0.025 J	0.003 U	0.0027 U	0.0026 U	0.0029 U	0.0061 J	0.00285 U	0.0037 J	0.00275 U	0.00275 U	0.0059 J	0.0027 U	0.0027 U
Indeno(1,2,3-cd)pyrene	MG/KG		0.043 J	0.002	0.0018	0.0024	0.0024	0.009	0.000275 U	0.0069	0.000265 U	0.0037	0.0093	0.00027 J	0.00076 J
Total BEQs			0.97864	0.057348	0.031404	0.039074	0.040845	0.1572	0.00693465	0.127025	0.00670855	0.061291	0.151863	0.00660855	0.0135892
	Industrial Exposure Limit	0.7													
SCTL Industrial Failure?			YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1													
SCTL Residential Failure?			YES	NO	NO	NO	NO	YES	NO	YES	NO	NO	YES	NO	NO

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL ^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-29	S-SS-30	S-SS-30	S-SS-30	S-SS-31	S-SS-31	S-SS-32	S-SS-32	S-SS-33	S-SS-33	S-SS-34	S-SS-34	S-SS-34
SampleID			S-SS-29-0.502	JM31-FD6-062211	S-SS-30-000.5	S-SS-30-0.502	S-SS-31-000.5	S-SS-31-0.502	S-SS-32-000.5	S-SS-32-0.502	S-SS-33-000.5	S-SS-33-0.502	JM31-FD3-062211	S-SS-34-000.5	S-SS-34-0.502
Sample Date			6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Parameter	Units	SCTL													
SW8310															
ene	MG/KG		0.000345 U	0.0017	0.0022	0.00069 J	0.0052	0.00029 U	0.033 J	0.0049	0.0033	0.0043	0.01 J	0.021 J	0.00077 J
Benzo(a)pyrene	MG/KG		0.0082 J	0.03	0.037	0.011	0.08	0.00315 U	0.34 J	0.11	0.072	0.074	0.12 J	0.25 J	0.038
hene	MG/KG		0.00092 J	0.0038	0.0037	0.0018	0.0078	0.000225 U	0.038 J	0.015	0.0086	0.0085	0.014 J	0.027 J	0.0029
hene	MG/KG		0.0000315 U	0.00024	0.00028	0.000093	0.00033	0.0000265 U	0.002 J	0.00056	0.00051	0.00033	0.00063 J	0.0016 J	0.00017
Chrysene	MG/KG		0.0000025 U	0.000028 J	0.000044 J	0.000029	0.000091	0.0000021 U	0.00044 J	0.0001	0.000087	0.000079	0.00017 J	0.00036 J	0.000027
acene	MG/KG		0.00325 U	0.00265 U	0.00275 U	0.00285 U	0.0062 J	0.00275 U	0.00275 U	0.00305 U	0.00275 U	0.0064 J	0.0028 U	0.00275 U	0.00285 U
cd)pyrene	MG/KG		0.00074 J	0.0024	0.0025	0.0026	0.0056	0.000265 U	0.021 J	0.0069	0.0038	0.0053	0.0091 J	0.016 J	0.0017
Total BEQs			0.013489	0.040818	0.048474	0.019062	0.105221	0.0067086	0.43719	0.14051	0.091047	0.098909	0.1567	0.31871	0.046417
	Industrial Exposure Limit	0.7													
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1													
SCTL Residential Failure?			NO	NO	NO	NO	YES	NO	YES	YES	NO	NO	YES	YES	NO

Notes:
NA Not analyzed
B The analyte was detected in the associated method and/or calibration blank.
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
mg/kg Milligrams per Kilogram
1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
SCTL ^{1 IND} - Soil Cleanup Target Level
Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-3
BEQ Data Summary
DRMO Land Slivers, NAS Key West

StationID			S-SS-35	S-SB-31	S-SB-32	S-SB-33	S-SB-34	S-SB-34	S-SB-36	S-SB-37	S-SB-38
SampleID			S-SS-35-000.5	S-SB-31-0204	S-SB-32-0204	S-SB-33-0204	JM31-FD4-062211	S-SB-34-0204	S-SB-36-0204	S-SB-37-0204	S-SB-38-0204
Sample Date			6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Parameter	Units	SCTL									
SW8310											
Benzo(a)anthracene	MG/KG		0.016	0.0013	0.0018	0.000385 U	0.0016	0.0014	0.000405 U	0.0015	0.0083
Benzo(a)pyrene	MG/KG		0.15 J	0.019	0.055	0.017	0.026 J	0.044 J	0.0044 U	0.014	0.07
Benzo(b)fluoranthene	MG/KG		0.02 J	0.0017	0.0033	0.0014	0.0018 J	0.0044 J	0.00031 U	0.0012	0.0051
Benzo(k)fluoranthene	MG/KG		0.00056 J	0.000076 J	0.00022	0.000073 J	0.000088 J	0.00016 J	0.000037 U	0.000054 J	0.00024
Chrysene	MG/KG		0.00026	0.000018	0.00003	0.000011	0.000017 J	0.000034 J	0.0000029 U	0.000024	0.0001
Dibenz(a,h)anthracene	MG/KG		0.0028 U	0.00375 U	0.00335 U	0.00365 U	0.0033 U	0.0034 U	0.0038 U	0.00315 U	0.0084 J
Indeno(1,2,3-cd)pyrene	MG/KG		0.0083	0.0012	0.0026	0.001 J	0.0016 J	0.0028 J	0.00037 U	0.001	0.005
Total BEQs			0.19792	0.027044	0.0663	0.023519	0.034405	0.056194	0.0093249	0.020928	0.09714
	Industrial Exposure Limit	0.7									
SCTL Industrial Failure?			NO	NO	NO	NO	NO	NO	NO	NO	NO
	Residential Exposure Limit	0.1									
SCTL Residential Failure?			YES	NO	NO	NO	NO	NO	NO	NO	NO

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

mg/kg Milligrams per Kilogram

1 Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg

SCTL ^{1 IND} - Soil Cleanup Target Level

Shading with "YES" indicates Total BaP equivalent failiure.

TABLE 1-4
SPLP Data Summary
DRMO Land Slivers, NAS Key West

Location			S-SB-21		S-SS-18		S-SS-21	
Sample ID			JM31-FD02-062211	S-SB-21-0204	JM31-FD5-062211	S-SS-18-000 5	JM31-FD01-062211	S-SS-21-0 502
Sample Depth (ft)			2 - 4	2 - 4	0 - 0.5	0 - 0.5	0.5 - 2	0.5 - 2
Sample Date			6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/22/2011
Analyte	Units	GCTL ¹						
PAH (UG/L)								
1-Methylnaphthalene	UG/L	28	0.14 U	0.14 U	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	28	0.29 U	0.3 U	NA	NA	NA	NA
Acenaphthene	UG/L	20	0.14 U	0.14 U	NA	NA	NA	NA
Acenaphthylene	UG/L	210	0.12 U	0.12 U	NA	NA	NA	NA
Anthracene	UG/L	2100	0.051 U	0.052 U	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	0.05	0.13 U	0.13 U	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	0.2	0.14 U	0.14 U	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	0.05	0.14 U	0.14 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	210	0.12 U	0.13 U	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	0.5	0.31 U	0.32 U	NA	NA	NA	NA
Chrysene	UG/L	4.8	0.37 U	0.38 U	NA	NA	NA	NA
Dibenzo(a,h)anthracene	UG/L	0.005	0.15 U	0.16 U	NA	NA	NA	NA
Fluoranthene	UG/L	280	0.15 U	0.15 U	NA	NA	NA	NA
Fluorene	UG/L	280	0.081 U	0.083 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	0.05	0.085 U	0.087 U	NA	NA	NA	NA
Naphthalene	UG/L	14	0.14 B	0.11 B	NA	NA	NA	NA
Phenanthrene	UG/L	210	0.16 U	0.17 U	NA	NA	NA	NA
Pyrene	UG/L	210	0.16 U	0.16 U	NA	NA	NA	NA
SW6020 (UG/L)								
Lead	UG/L	15	NA	NA	11.2 J	27.8 J	NA	NA
SW8082 (UG/L)								
Aroclor-1016	UG/L	0.5	NA	NA	NA	NA	1.5 U	1.5 U
Aroclor-1221	UG/L	0.5	NA	NA	NA	NA	1.8 U	1.8 U
Aroclor-1232	UG/L	0.5	NA	NA	NA	NA	0.86 U	0.85 U
Aroclor-1242	UG/L	0.5	NA	NA	NA	NA	1.3 U	1.3 U
Aroclor-1248	UG/L	0.5	NA	NA	NA	NA	0.56 U	0.55 U
Aroclor-1254	UG/L	0.5	NA	NA	NA	NA	0.52 U	0.51 U
Aroclor-1260	UG/L	0.5	NA	NA	NA	NA	3.2 J	1.5 J

Notes:

NA Not analyzed

B The analyte was detected in the associated method and/or calibration blank.

J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

ug/l Micrograms per Liter

Bold indicates the analyte was detected

Shading indicates the analyte exceeded GCTL1

GCTL - Groundwater Cleanup Target Level

1 = Ch 62-777 FAC Groundwater Cleanup Target Levels (GCTLs) reported in µg/L

2.0 Project Execution Plan

2.1 Scope of Work

The following activities are associated with the scope of work:

- Pre-excavation in situ waste characterization and backfill sampling
- Mobilization, site preparation, and underground utility survey
- Excavation of impacted surface and subsurface soil at the north and south DRMO land sliver sites
- Confirmation Sampling
- Backfill of excavated areas
- Containerization, transportation, and disposal (T&D) of solid and liquid waste streams
- Site restoration of the excavated areas
- Decontamination and demobilization
- Preparation and submittal of Project Completion Report

2.1.1 North DRMO Land Sliver

Soil represented by samples with COC concentrations in excess of the target levels will be removed from two separate impacted areas at the north DRMO land sliver. One area is impacted to 6 inches bls (approximately 1,327 square feet [ft²]) and a second area extends to 2 feet bls (approximately 1,301 ft²); however, the upper 6 inches of this area is not impacted in this area and can be reused as backfill. The depth of the 6-inch overburden will be measured using a survey rod to ensure no more than 6 inches of soil is removed as “clean” fill. The impacted areas extend to the road to the north and to the Navy fence to the south. Figure 2-1 depicts the soil at the north DRMO land sliver exceeding the FDEP Direct Exposure Residential SCTLs and the proposed excavation areas; the resulting volume of soil contamination is approximately 97 yd³.

2.1.2 South DRMO Land Sliver

The vertical extent of COC contamination has been delineated for the south DRMO land sliver. Soil exceeded the FDEP Direct Exposure Residential SCTLs to a depth of 6 inches in four discrete areas encompassing approximately 1,839 ft² and to a depth of 2 feet bls in six discrete areas encompassing approximately 6,616 ft² (Figure 2-2). Additionally, in order to avoid implementing land use controls (LUCs) on soil greater than 2 feet, one area will be excavated to 4 feet bls near the east end of the south DRMO land sliver. Figure 2-3 depicts this area, which encompasses approximately 122 ft². The excavation at the south DRMO sliver will extend to the north to the aesthetically pleasing fence; the soil north of the fence currently meets FDEP Direct Exposure Residential SCTLs as a result of past DRMO soil removal actions. The excavation will extend to the south to the former DRMO property line. Figures 2-2 and 2-3 depict the extent of contaminated surface and subsurface soil, and the excavation areas identified in the south DRMO land sliver; the resulting volume of contaminated soil for excavation is approximately 533 yd³. Because of the presence of

numerous utilities in the subsurface near the road, the excavation will not extend to the road as part of this NTCRA.

The identified excavation limits of the north and south DRMO land slivers are provided on Figures 2-1, 2-2, and 2-3.

2.2 Notifications

Prior to conducting field activities, NAVFAC SE will provide notification to all interested parties including, but not limited to, NAS Key West Environmental, Public Works Department (PWD), Facilities Engineering Acquisition Division (FEAD), Fort Zachary Taylor State Park, Florida Keys Aqueduct Authority, and the State Historic Preservation Officer (SHPO). A dig permit will be initiated with NAS Key West PWD by AGVIQ-CH2M HILL no less than 2 weeks prior to mobilization.

2.3 Pre-excavation Waste Characterization

Pre-excavation soil characterization sampling and analysis will be performed in accordance with Section 3.0 Sampling and Analysis Plan (SAP) of this Work Plan prior to excavation to determine the necessary waste management and T&D requirements for the COC-impacted soil. Two separate composite samples will be collected, one from each proposed excavation area (north and south DRMO land sliver sites) for waste characterization.

2.4 Pre-Excavation Survey

The excavation limits for the north and south DRMO land sliver sites (as shown on Figures 2-1, 2-2, and 2-3) will be marked by the AGVIQ-CH2M HILL field team prior to the beginning of intrusive work. The excavation limits will be identified based on Global Positioning System (GPS) data from the 2010 and 2011 sample locations.

A Florida-Licensed Professional Land Surveyor will be contracted to locate the excavation area. This survey will include an accurate topographic delineation of the area to be excavated. The topographic delineation will be critical in restoring the excavation area to the original grade and elevation.

2.5 Backfill Material Certification

Backfill material sampling and analysis will be performed in accordance with Section 3.0 Sampling and Analysis Plan of this Work Plan. Samples will be collected from a potential backfill offsite source to determine if it is suitable for use as fill material. The *in situ* material from the north DRMO land sliver that will be used as backfill has been analyzed for site COCs and will not be analyzed for the full backfill suite of parameters.

2.6 Mobilization, Site Preparation, and Utility Survey

This task consists of mobilizing personnel and equipment to the project site and establishing a decontamination area. If required, the Navy will provide oversight of the excavation by an archeologist or individual with historical archeological experience and familiarity with this area. The decontamination area will be prepared prior to commencement of the work.

AGVIQ-CH2M HILL will coordinate with Sunshine State One Call of Florida, Florida Keys Aqueduct Authority, and NAS Key West FEAD and PWD to complete a site utility survey and to acquire utility layout plans of the area. In addition, AGVIQ-CH2M HILL will subcontract the services of a qualified firm to identify underground utilities in the areas of proposed drilling. Utilities in the work areas will be marked with paint and stakes, as appropriate. The progress of subsurface work will be monitored continuously for evidence of obstructions.

Erosion control measures will be implemented if soil is stockpiled or an excavation remains open overnight. Plastic sheeting, silt fencing, and hay bales will be available onsite should weather conditions warrant covering and berming stockpiled material to control runoff or dust emissions. The temporary containment will consist of straw bales around the perimeter of the stockpile staging area and a polyethylene liner and cover.

2.7 Soil Excavation

The excavation areas are shown on Figures 2-1, 2-2, and 2-3. The COC-impacted soil will be excavated to an approximate depth of up to 4 feet using a mini excavator and skid steer, and the excavated material will be either direct-loaded or temporarily stockpiled in a lined and bermed area using a front-end loader. Excavated soil will be managed, transported, and disposed of in accordance with Section 4.0 Waste Management Plan of this Work Plan.

The estimated excavated volume of soil will be approximately 97 yd³ from the north DRMO land sliver and 533 yd³ from the south DRMO land sliver. The upper 6 inches of the western excavation at the north DRMO land sliver meets the Direct Exposure Residential SCTLs and may be reused as backfill.

Numerous aboveground and underground utilities exist within or near the excavation areas. Of particular note, an 8-inch water main lies approximately 4 feet beneath the south DRMO land sliver and runs parallel with the road along the centerline of the south DRMO land sliver. The excavation above the water main will extend to 2 feet only; however, precautions will be taken to ensure the integrity of the water line is not compromised. Prior to excavation, the top of the water main will be located by hand digging using shovels at 100-foot increments. The excavation will be conducted using a small excavator (JD200 or equivalent). Soil removal will be completed in 50-foot sections, backfilling each 50-foot section with clean fill material before moving on to the next section. The excavation will continue in this manner along the entire length of the water main.

2.8 Soil Confirmation Sampling

2.8.1 North DRMO Land Sliver

Confirmation samples will be collected along the northern excavation wall and analyzed for PAHs to assess whether contamination reaches the road. Two samples will be collected adjacent to the road from the western excavation area from 0.5 to 2 feet bls; two samples will be collected adjacent to the road from the eastern excavation area from 0 to 0.5 feet bls. Figure 2-4 presents the post-excavation confirmation sampling locations for the north DRMO land sliver. All samples will be analyzed for PAHs on standard turnaround time in accordance with AGVIQ-CH2M HILL's Uniform Federal Policy Sampling and Analysis Plan

(UFP-SAP; AGVIQ-CH2M HILL, 2010a), as well as Section 3.0 Sampling and Analysis Plan, of this Work Plan. Results will be compared to the FDEP Direct Exposure Residential SCTLs (refer to Section 5.1 for the project action levels). If results indicate exceedances of the SCTLs, future actions may be warranted.

2.8.2 South DRMO Land Sliver

Confirmation samples will be collected along the southern excavation wall and analyzed on standard turnaround time to assess whether contamination extends beyond the excavation boundary. Twenty-five samples will be collected from 14 locations adjacent to the road south of the excavation areas. At 3 locations, samples will be collected from 0 to 0.5 feet bls; at the remaining 11 locations, samples will be collected from 0 to 0.5 feet bls and 0.5 to 2 feet bls. Depending on the COC associated with the sample location, the samples will be analyzed for any combination of arsenic, lead, PCBs and/or PAHs. Figure 2-5 presents the post excavation confirmation sampling locations for the south DRMO land sliver and the sample color denotes the associated analyses. All samples will be analyzed in accordance with the 2010 UFP-SAP (AGVIQ-CH2M HILL, 2010a), as well as Section 3.0, Sampling and Analysis Plan, of this Work Plan. Results will be compared to the FDEP Direct Exposure Residential SCTLs (refer to Section 5.1 for the project action levels). If results indicate exceedances of the SCTLs, future actions may be warranted.

2.9 Backfill

Following completion of the excavation activities, the excavated areas will be backfilled to original grade with clean soil that is consistent with the native soils. The majority of the fill material will be from an offsite source and will meet FDEP Direct Exposure Residential standards. At the north DRMO sliver, the upper 6 inches of soil from the easternmost excavation area will also be used for backfill at the north sliver. The topmost backfill (up to 6 inches) shall be suitable for establishment of a vegetation cover. Backfill will be track-compacted in place with existing equipment only in order to protect the underground water line and minimize post-remediation erosion. No vibratory units will be used. No compaction testing is required.

2.10 Post Excavation Survey

Upon completion of the excavation, the excavation will be surveyed by a Florida-licensed Professional Land Surveyor to ensure that both the horizontal and vertical boundaries of the delineated area are reached and properly recorded.

2.11 Site Restoration

Following backfilling, all disturbed areas from excavation activities will be restored to preexisting or surrounding conditions. Since the removal action will result in soil inside the temporary fence at the south DRMO land sliver meeting the Direct Exposure Residential SCTLs, the fencing will be removed prior to excavation and will be permanently removed offsite. Topsoil is not required; however, the offsite material used for backfill must be capable of supporting vegetation. Until validated sampling results are received, the backfill topsoil will act as the native cover. Once the Navy has received confirmation that a clean closure can be accomplished, then arrangements for a native grass cover will be considered.

in the next scope of work. In the interim, the silt fence used as part of the excavation will be kept in place to help minimize soil erosion control. It is anticipated that "native grasses" should begin to establish within 2 to 3 weeks after excavation to aid in soil stabilization.

2.12 Decontamination

An area will be designated for the decontamination of equipment and the storage of all waste. Personnel and equipment will be properly decontaminated to remove all contamination that may be adhering to them as the result of excavation activities. Any water accumulated during the decontamination process will be containerized in 55-gallon drums or portable tanks sampled in accordance with FDEP Standard Operating Procedures (SOPs) DEP-SOP-001/01 FS 3000 and DEP-SOP-001/01 FS 5000, and managed, transported, and disposed of in accordance with Section 3.0 Waste Management Plan of this Work Plan and DEP-SOP-001/01 FT 1000. Decontamination of personnel and equipment will be performed in accordance with the site-specific Accident Prevention Plan (APP) provided in Appendix A, DEP-SOP-001/01 FS 5000, and the applicable provisions of 29 Code of Federal Regulations (CFR) 1910.120. All non-disposable sampling equipment will be decontaminated before use and immediately after each use in accordance with applicable SOPs.

2.13 Demobilization

During demobilization, temporary facilities, utilities, and equipment will be removed from the site. In addition, any debris or solid waste material remaining from construction activities will be removed and properly disposed of offsite in accordance with Section 4.0 Waste Management Plan of this Work Plan.

2.14 Project Completion Report

A Project Completion Report will be prepared that will summarize the site activities including the limits of excavation and soil volume removed and disposed of offsite.

2.15 Project Schedule

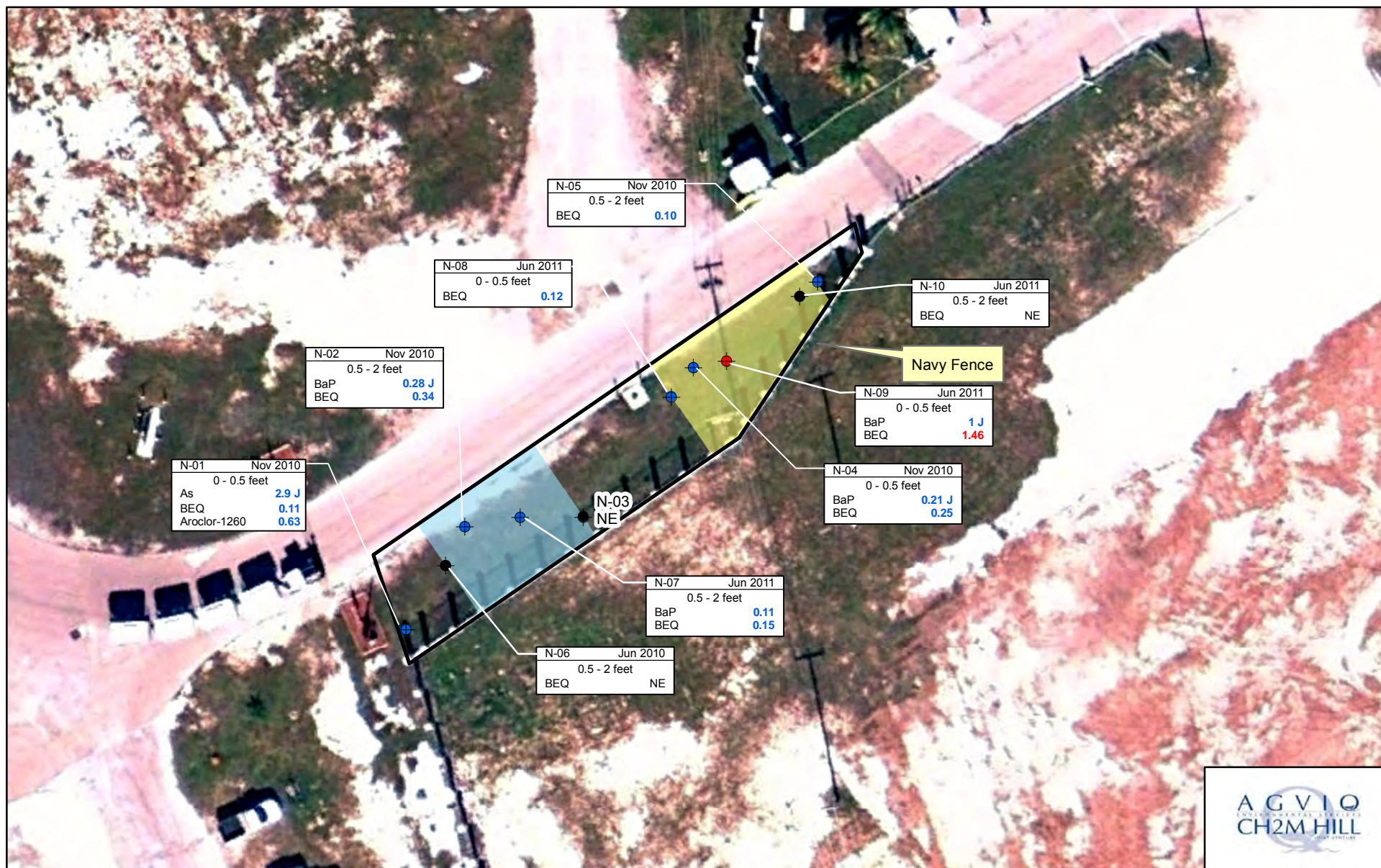
The primary project activities and estimated duration for each are outlined below. Field work, which will begin following approval of this Work Plan, is tentatively scheduled to begin in July 2012 with the mobilization for the excavation activities to begin on July 16, 2012. The proposed duration for each project task is listed below:

- | | |
|---|---------|
| • Waste characterization and backfill sampling and analyses | 3 weeks |
| • Pre-construction meeting/submittal preparation/reviews | 2 weeks |
| • Mobilization and site preparation | 1 day |
| • Soil excavation | 3 weeks |
| • T&D of excavated soil | 2 weeks |
| • Waste characterization of aqueous wastes | 3 weeks |
| • Backfill and site restoration | 1 day |
| • T&D of aqueous waste | 1 day |
| • Preparation of completion report | 8 weeks |

This proposed schedule may vary, depending on the actual conditions encountered in the field.

2.16 Traffic Control Plan

Traffic control will be the responsibility of the AGVIQ-CH2M HILL Site Superintendent. AGVIQ-CH2M HILL will minimize disturbance to NAS Key West, the City of Key West, and Fort Zachary Taylor State Park traffic patterns as much as possible during project activities. Delivery and haul trucks will arrive on site via U.S. 1 (Truman Avenue) to Whitehead Street and Southard Street. Figure 2-6 presents the traffic route through Key West to Truman Annex. Access to and from the south DRMO land sliver will be through the Fort Zachary Taylor State Park gate on Fort Street. Access to and from the north DRMO land sliver will be via Angela Street through the Mole Pier gate. Because of the limited space at the south DRMO land sliver area, traffic may be interrupted during waste hauling activities to ensure public safety. Access to and from the north DRMO land sliver will be through the City of Key West/NAS Key West Port Operations gate. AGVIQ-CH2M HILL will consult with onsite personnel to evaluate site access, placement of equipment, and traffic flow to minimize the impact of this work. A more detailed traffic plan will be provided prior to commencement of field activities. Figures 2-7 and 2-8 present the proposed laydown areas for construction equipment during field activities.

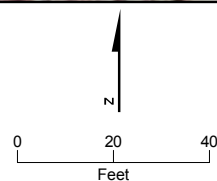


Legend

- Soil Boring (No Exceedance)
- Soil Boring (Exceeds Residential)
- Soil Boring (Exceeds Industrial)

- 0.5 ft Excavation (1,327 square feet)
- 2 ft Excavation (1,301 square feet)

- As = Arsenic
- BaP = Benzo(a)pyrene
- BEQ = Benzo(a)pyrene Equivalent
- J = Estimated
- NE = No Exceedance

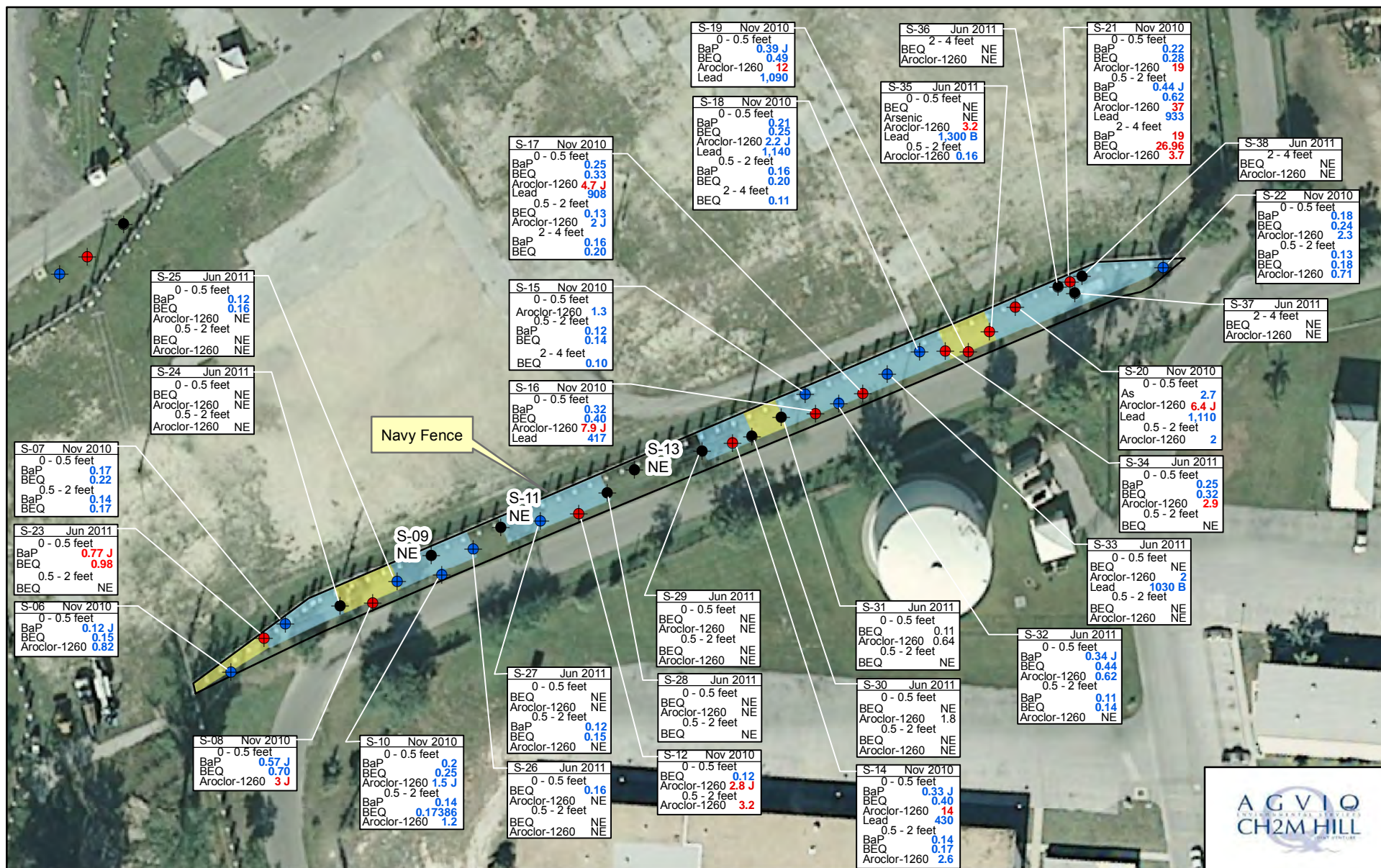


SCREENING STANDARDS		
Analyte	Residential SCTL	Industrial SCTL
As	2.1	12
BaP	0.1	0.7
BEQ	0.1	0.7
Aroclor-1260	0.5	2.6
Lead	400	1,400

All units in milligrams per kilogram



Figure 2-1
Excavation Based on Residential Criteria in North DRMO Land Sliver
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida

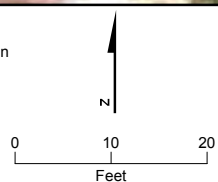




Legend

- Soil Boring (Exceeds Residential Criteria)
- Soil Boring (Exceeds Residential & Industrial Criteria)
- Soil Boring (No Exceedance)

2-4 fee Deep Excavation
(122 square feet)



Notes:

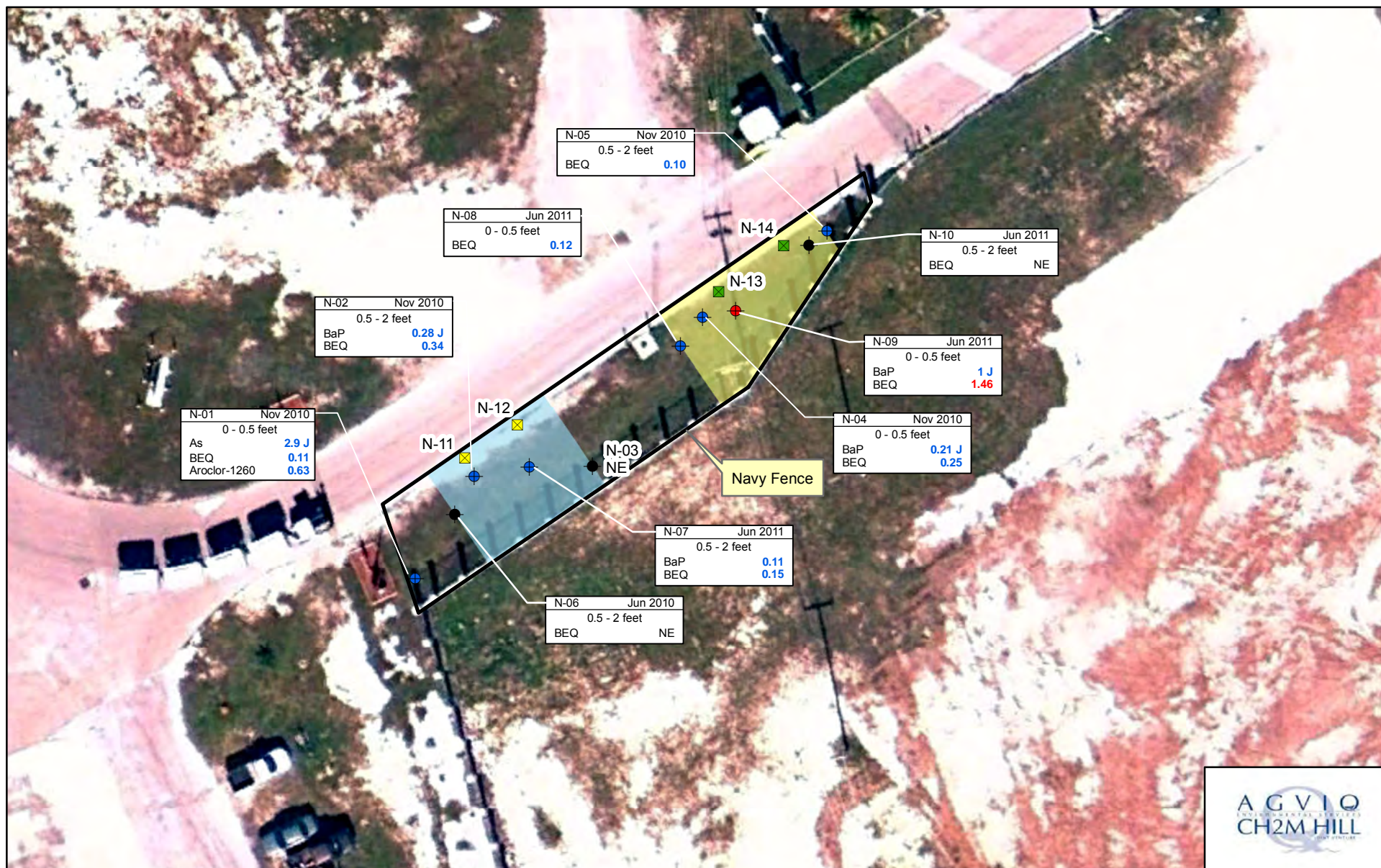
- As = Arsenic
- BaP = Benzo(a)pyrene
- BEQ = Benzo(a)pyrene Equivalent
- J = Estimated
- NE = No Exceedance

SCREENING STANDARDS

Analyte	Residential SCIL	Industrial SCIL
As	2.1	12
BaP	0.1	0.7
BEQ	0.1	0.7
Aroclor-1260	0.5	2.6
Lead	400	1,400

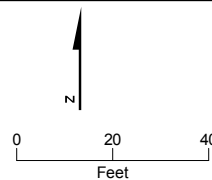
All units in milligrams per kilogram

Figure 2-3
 Four Foot Excavation Based on
 Residential Criteria in South DRMO Land Sliver
 Former DRMO Slivers, Truman Annex
 NAS Key West
 Key West, Florida



Legend

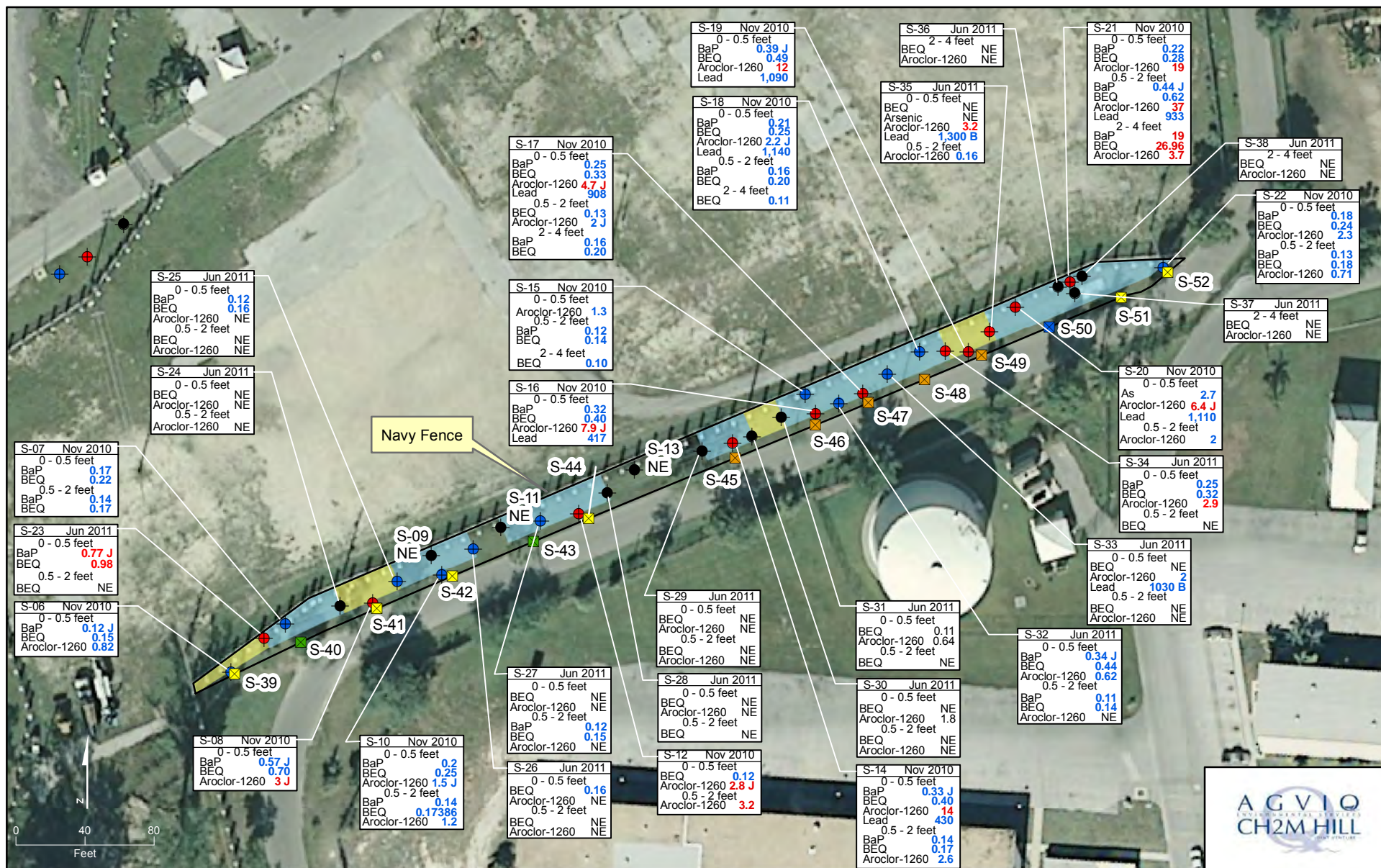
- Soil Boring (No Exceedance)
- Soil Boring (Exceeds Residential)
- Soil Boring (Exceed Industrial)
- PAH Confirmation Samples 0 - 0.5 ft
- PAH Confirmation Samples 0.5 - 2 ft
- 0.5 ft Excavation (1,327 square feet)
- 2 ft Excavation (1,301 square feet)
- As = Arsenic
- BaP = Benzo(a)pyrene
- BEQ = Benzo(a)pyrene Equivalent
- J = Estimated
- NE = No Exceedance



SCREENING STANDARDS		
Analyte	Residential SCTL	Industrial SCTL
As	2.1	12
BaP	0.1	0.7
BEQ	0.1	0.7
Aroclor-1260	0.5	2.6
Lead	400	1,400

All units in milligrams per kilogram

Figure 2-4
Confirmation Sample Locations
North DRMO Land Sliver
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida



Legend

- Soil Boring (Exceeds Residential Criteria)
- Soil Boring (Exceeds Residential & Industrial Criteria)
- Soil Boring (No Exceedance)
- PAHs
- PAHs and PCBs
- PAHs, PCBs, and lead
- PAHs, PCBs, lead and As
- 0.5 feet Deep Excavation (1,839 square feet)
- 2 feet Deep Excavation (6,616 square feet)

Notes:

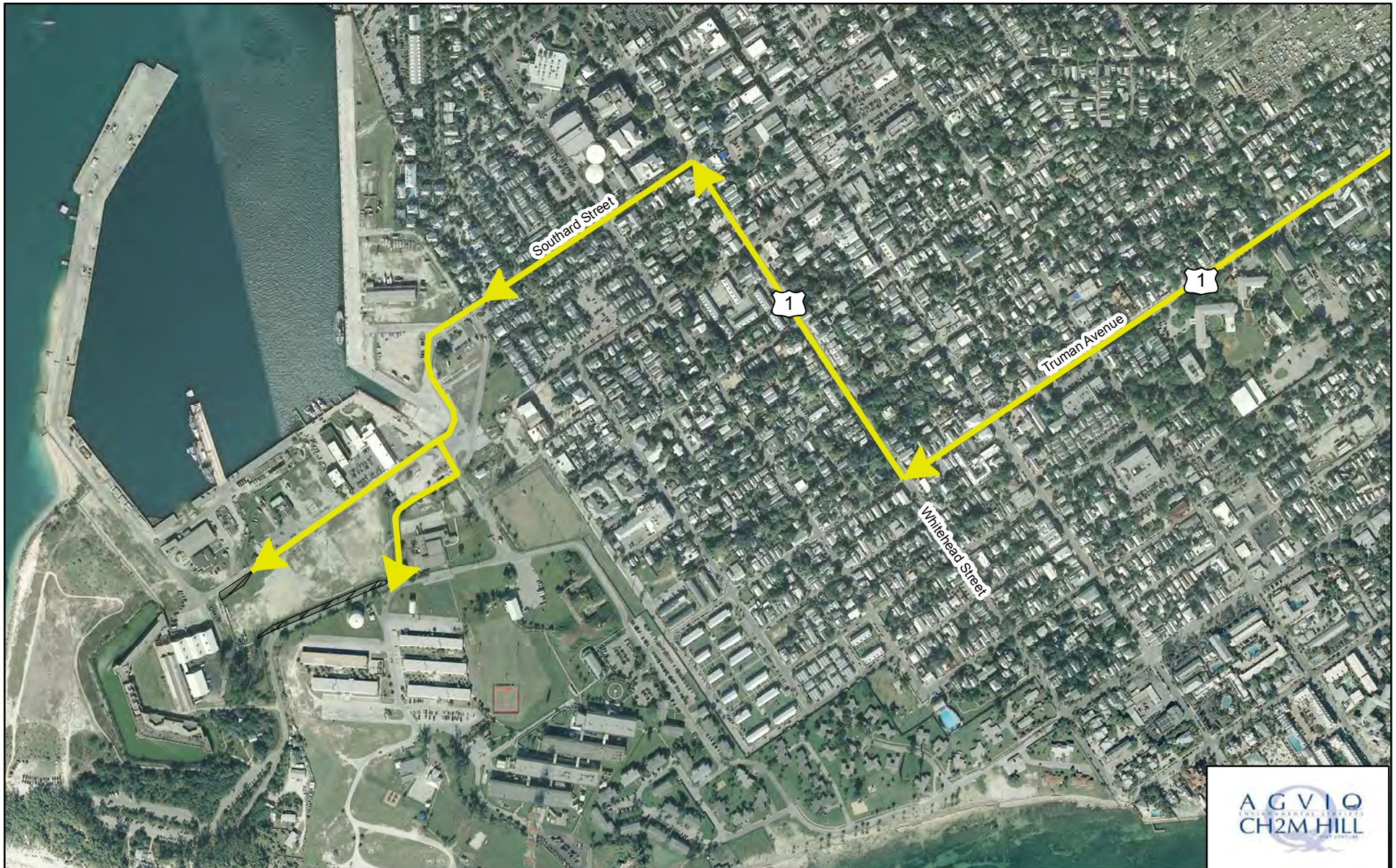
- As = Arsenic
- BaP = Benzo(a)pyrene
- BEQ = Benzo(a)pyrene Equivalent
- J = Estimated
- NE = No Exceedance

SCREENING STANDARDS

Analyte	Residential SCIL	Industrial SCIL
As	2.1	12
BaP	0.1	0.7
BEQ	0.1	0.7
Aroclor-1260	0.5	2.6
Lead	400	1,400

All units in milligrams per kilogram

Figure 2-5
Confirmation Sample Locations
South DRMO Land Sliver
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida



Legend

-  Traffic Route
-  DRMO Sliver

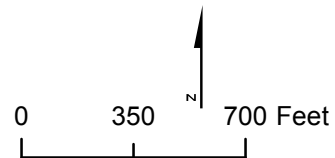


Figure 2-6
Traffic Route Map
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida



Legend

- | | |
|--|--|
| ● Soil Boring
(No Exceedance) | ■ PAH Confirmation Samples
0 - 0.5 ft |
| ● Soil Boring
(Exceeds Residential) | ■ PAH Confirmation Samples 0.5 - 2 ft |
| ● Soil Boring
(Exceed Industrial) | ■ 0.5 ft Excavation
(1,327 square feet) |
| | ■ 2 ft Excavation
(1,301 square feet) |

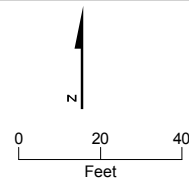


Figure 2-7
Laydown Area
North DRMO Land Sliver
Former DRMO Slivers, Truman Annex
NAS Key West
Key West, Florida



Legend

- | | | |
|---|---------------------------|--|
| ● Soil Boring (Exceeds Residential Criteria) | ■ PAHs | ■ 0.5 feet Deep Excavation (1,839 square feet) |
| ● Soil Boring (Exceeds Residential & Industrial Criteria) | ■ PAHs and PCBs | ■ 2 feet Deep Excavation (6,616 square feet) |
| ● Soil Boring (No Exceedance) | ■ PAHs, PCBs, and lead | |
| | ■ PAHs, PCBs, lead and As | |

Figure 2-8
 Laydown Area
 South DRMO Land Sliver
 Former DRMO Slivers, Truman Annex
 NAS Key West
 Key West, Florida

3.0 Sampling and Analysis Plan

This SAP describes the tasks and responsibilities of AGVIQ-CH2M HILL with respect to the sampling and analysis associated with the work effort described in this Work Plan. AGVIQ-CH2M HILL intends this section to be a site-specific guide for use by the field team while performing the project-required sampling and analysis. Any changes to the activities described in this SAP must be documented as a revision to this SAP and approved by the Project Manager and Project Chemist.

Sampling will be conducted in accordance with U.S. Environmental Protection Agency (EPA) Region 4 Field Branches Quality System and Technical Procedures, (EPA, 2012) and FDEP SOPs for Field Activities, DEP-SOP-001/01 (FDEP, 2008). Where the two documents differ, the more stringent will apply.

PEL Laboratories, a Division of Spectrum Analytical, Inc., will be used for all sample analyses. Qualifications and analytical methods for PEL Laboratories are presented in the UFP-SAP Revision 01 (AGVIQ-CH2M HILL, 2010a).

3.1 Data Quality Levels for Measurement Data

The data quality levels for this work are listed in Table 3-1. The sampling events, sampling and analytical requirements, and required level of quality and data packages are listed in Table 3-2. The precision, accuracy, representativeness, completeness and comparability (PARCC) limits by which the data will be evaluated will be provided by the selected laboratory and approved by AGVIQ-CH2M HILL's Project Chemist prior to any samples being analyzed. All analytical data will be submitted in both hard copy and electronic files.

TABLE 3-1
Data Quality Levels

Sampling Activity	Data Quality Level Category
Clean Backfill Fill Certification (offsite laboratory analyses)	Definitive
Confirmation Soil Sampling (offsite laboratory analyses)	Definitive
Liquid Waste Characterization (offsite laboratory analyses)	Definitive
Solid Waste Characterization (offsite laboratory analyses)	Definitive

TABLE 3-2

Confirmation Sampling, Waste Characterization, and Backfill Sampling Analytical Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	Data Package Reqmnt	Required Analysis	Analytical Method	Holding Time	Sample Preservtn	Containers
Soil Characterization Sampling													
Soil Confirmation Sampling	South DRMO Sliver	Soil	S-39 and S-41 (0 - 0.5 ft); S-44, S-51 and S-52 (0 - 0.5 and 0.5 - 2 ft)	8 + 1 DUP +1 MS + 1 MSD + 1 EQ Blank = 12	Grab sampling	SS spoon, SS bowl	14-day	AGVIQ-CH2M HILL Level C	PCBs and PAHs (including 1-and 2-Methylnaphthalene)	8082A and 8310	14 day extr; 40 day analysis	Cool to 4°C	(1) 8-oz amber glass
	North DRMO Sliver		N11 and N12 (0.5 - 2 ft); N13 and N14 (0 - 0.5 ft)	4 + 1 DUP +1 MS + 1 MSD + 1 EQ Blank = 8			14-day		PAHs (including 1-and 2-Methylnaphthalene)	8310	14 day extr; 40 day analysis		(1) 4-oz amber glass
	South DRMO Sliver		S-40 and S-43 (0 - 0.5 and 0.5 - 2 ft)	4			14-day		PAHs (including 1-and 2-Methylnaphthalene)	8310	14 day extr; 40 day analysis		(1) 4-oz amber glass
	South DRMO Sliver		S-45, S-46, S-47, and S-48 and S-41 (0 - 0.5 and 0.5 - 2 ft); S-49 (0 - 0.5 ft)	9 + 1 DUP +1 MS + 1 MSD + 1 EQ Blank = 13			14-day		Lead, PCBs and PAHs (including 1-and 2-Methylnaphthalene)	8082A, 8310, and 6020A	14 day extr; 40 day analysis; 180 days for Lead		(1) 8-oz amber glass and (1) 4-oz amber glass
	South DRMO Sliver		S-42 and S-50 (0 - 0.5 and 0.5 - 2 ft)	4 + 1 DUP +1 MS + 1 MSD + 1 EQ Blank = 8			14-day		Arsenic, Lead, PCBs and PAHs (including 1- and 2-Methylnaphthalene)	8082A, 8310, and 6020A	14 day extr; 40 day analysis; 180 days for Lead & Arsenic		(1) 8-oz amber glass and (1) 4-oz amber glass
Soil Characterization Sampling													
Soil Characterization Sampling	Within excavation areas	Soil	One from north DRMO excavation area and one from south DRMO excavation area	2	Composite 5 random grabs into 1 sample (do not composite VOCs)	SS spoon, SS bowl	7-day	AGVIQ-CH2M HILL Level B	TCLP Volatiles	1311/8260B	14 day TCLP extr; 14 day analysis	Cool to 4°C	(1) 4-oz amber glass
									TCLP Semi-Volatiles	1311/8270D	14 day TCLP extr; 7 day extr; 40 day analysis		(3) 8-oz amber glass
									TCLP Metals	1311/6010C/74 70A	6 month TCLP extr; 6 month analysis Hg: 28 day TCLP extr; 28 day analysis		
									TCLP Pesticides	1311/8081B	14 day TCLP extr; 7 day extr; 40 day analysis		
									TCLP Herbicides	1311/8151A	14 day TCLP extr; 7 day extr; 40 day analysis		
									PCBs	8082A	14 day extr; 40 day analysis		
									Corrosivity	9045D	ASAP		
									Ignitability	1010/1030	ASAP		

TABLE 3-2

Confirmation Sampling, Waste Characterization, and Backfill Sampling Analytical Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	Data Package Reqmnt	Required Analysis	Analytical Method	Holding Time	Sample Preservtn	Containers	
Liquid Characterization Sampling														
Liquid Characterization Sampling (to include drummed liquid / plastic and decon water)	Drums or Tanks	Water	Once	1	Grab	Drum thief or dip jar	7-day	AGVIQ-CH2M HILL Level B	TCL Volatiles	8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40-ml vials	
									TCL Semi-volatiles	8270D	7 days ext; 40 days analysis	Cool to 4°C	(4) 1L amber glass	
									TCL Pesticides	8081B	7 days ext; 40 days analysis			
									TCL Herbicides	8151A	7 day extr; 40 day analysis			
									PCBs	8082A	7 day extr; 40 day analysis			
									TAL Metals	6010C/7470A	180 days; Hg=28 days	HNO3 pH< 2; Cool to 4°C	(1) 500-ml HDPE	
									Ignitability	1010	ASAP	Cool to 4°C	(1) 250-ml amber glass	
									Corrosivity	9040B	ASAP		(1) 250-ml amber glass	
Backfill Characterization Sampling														
Characterization of Backfill Material	Offsite Source	Soil	One per source	1 + 1 DUP = 2 samples	Composite 5 random grabs into 1 sample (Do not composite VOCs)	SS spoon, SS bowl, TerraCore samplers, (3) Prepared 40-ml vials (4oz jar for stone)	7-day	AGVIQ-CH2M HILL Level C	TCL Volatiles	5035/8260B	48hrs preservation/14 days	H2O; Methanol; Cool to 4°C	TerraCore samplers, (3) Prepared 40-ml vials and 2-oz jar	
									TCL Semi-Volatiles	8270D	14 day extr; 40 day analysis	Cool to 4°C		(3) 8-oz amber glass
									PAHs (including 1-and 2-Methylnaphthalene)	8310	14 day extr; 40 day analysis			
									TCL Pesticides	8081B	14 day extr; 40 day analysis			
									TCL Herbicides	8151A	14 day extr; 40 day analysis			
									PCBs	8082A	14 day extr; 40 day analysis			
									TRPH	FL-PRO	14 day extr; 40 day analysis			
									TAL Metals	6010C/7471A	180 days; Hg 28 days			
									pH	9045D	ASAP			
	Equipment Rinsate Blank	Water	10% of total samples collected	1	Prepared in Field	Analyte-free water, SS funnel	7-day	AGVIQ-CH2M HILL Level C	TCL Volatiles	8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40-ml vials	
									TCL Semi-volatiles	8270D	7 days ext; 40 days analysis	Cool to 4°C	(4) 1-liter amber glass	
									PAHs (including 1-and 2-Methylnaphthalene)	8310	7 days ext; 40 days analysis			
									TCL Pesticides	8081B	7 days ext; 40 days analysis			
									TCL Herbicides	8151A	7 day extr; 40 day analysis			
									PCBs	8082A	7 day extr; 40 day analysis	HNO3 pH< 2; Cool to 4°C	(1) 500-ml HDPE	
									TAL Metals	6010C/7470A	180 days; Hg=28 days			
									TRPH	FL-PRO	7 days ext; 40 days analysis			
									pH	9040B	ASAP	Cool to 4°C	(1) 250-ml amber glass	
	Trip Blank	Water	1 Per cooler containing volatile samples	1	Prepared by Lab	(2) 40-ml vials	7-day	AGVIQ-CH2M HILL Level C	TCL Volatiles	8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 4- ml vials	

3.2 Sampling Objectives

The sampling objectives for this project are as follows:

- Collect soil samples for certification of backfill clean soil materials.
- Collect soil samples for confirmation of contamination removal.
- Collect samples of soil for excavation waste characterization.
- Collect samples of decontamination water, if necessary.

3.3 Soil Confirmation Sampling

Soil samples will be collected along the north wall of the north DRMO sliver and the south wall of the south DRMO sliver for confirmation purposes.

Procedure for Collecting Non-Volatile Samples

1. From each of the sample locations, collect several spoonfuls of the soil into a stainless steel bowl.
2. Homogenize the samples by the quartering techniques using the stainless steel spoon.
3. Fill the appropriate sample jars full with the homogenized sample.
4. Close the jar, label it, and package the sample for shipment to the laboratory.

An AGVIQ-CH2M HILL Level C data package will be required along with appropriate quality control (QC) samples for required analyses. All analytical data will be submitted by both hard copy and electronic files.

3.4 Backfill Certification

In order to certify backfill source materials as uncontaminated or equal to site conditions, one sample will be collected from each site and source used to provide backfill materials. Backfill material must meet FDEP SCTLs for Direct Exposure – Residential and Leachability based on Groundwater Criteria, whichever is lower, as specified in Chapter 62-777 FAC.

The samples will be collected in the following manner and analyzed in accordance with Table 3-2.

Procedure for Collecting Volatile Fractions

1. Using an auger, split spoon, or other device, retrieve a core from the stockpile or borrow source area to be tested.
2. Remove the core from the auger, split spoon, or other device.
3. Using a TerraCore sampler, take an approximately 5-gram sample from the core.
4. Place the 5-gram sample into a pre-preserved volatile organic aromatic (VOA) vial and seal the cap tightly. Do this for all vials provided by the laboratory (Note: ideally the entire operation; filling the TerraCore sampler, pushing it into the vial, and capping the vial; should not take more than 1 minute).

5. After filling the required VOA vials, fill a 4-ounce jar completely full with the remaining core sample. This will be used by the laboratory to determine percent moisture.
6. Label the vials.
7. Place in cooler for shipment to the laboratory.

Procedure for Collecting Non-Volatile Samples

5. From five randomly selected sample locations, collect several spoonfuls of the soil into a stainless steel bowl.
6. Homogenize the five grab samples by the quartering techniques using the stainless steel spoon.
7. Fill the appropriate sample jars full with the homogenized sample.
8. Close the jar, label it, and package the sample for shipment to the laboratory.

An AGVIQ-CH2M HILL Level C data package will be required along with appropriate QC samples for required analyses. All analytical data will be submitted by both hard copy and electronic files.

3.5 Soil Disposal Characterization

Solid waste from the site will be in the form of excavated contaminated soil. Pre-excavation soil characterization sampling and analysis will be performed prior to excavation to determine the necessary handling and T&D requirements for the contaminated soil.

One composite sample will be collected from each of the north and south DRMO land sliver excavations for waste characterization. The composite samples will be from five representative locations at the north DRMO land sliver to 6 inches and to 2 feet bls within the corresponding proposed excavation areas; the composite samples will be from five representative locations at the south DRMO land sliver to 6 inches, to 2 feet, and to 4 feet bls within the corresponding proposed excavation areas. A total of two composite samples will be collected. Note that VOC samples will not be composited, but collected as a single grab. The samples will be collected in the following manner and analyzed in accordance with Tables 3-2.

Procedure for Collecting Volatile Fractions

1. At the selected sample location, using an auger, split spoon, or other similar device, retrieve a core.
2. Fill the appropriate (4-ounce jars) sample jars completely full with the sample from the core.
3. Close the jar, label it, and package the sample for shipment to the laboratory.

Procedure for Collecting Non-Volatile Samples

1. From five additional randomly selected sample locations, collect several spoonfuls of the soil via hand auger or similar technique from 0 to 6 inches bls into a stainless steel bowl.

2. Homogenize the five samples by the quartering techniques using the stainless steel spoon.
3. Fill the appropriate sample jars completely full with the homogenized sample.
4. Close the jar, label it, and package the sample for shipment to the laboratory.

An AGVIQ-CH2M HILL Level B data package will be required along with appropriate QC samples for required analyses. All analytical data will be submitted by both hard copy and electronic files.

3.6 Decontamination Water Disposal Characterization

Liquid waste from the site will be in the form of decontamination water. Decontamination water will be containerized in 55-gallon drums or portable tanks. It is estimated that one sample will be needed to perform characterization of the decontamination water. Additional samples may be necessary depending on the types of waste streams generated. The sample will be collected in the following manner and analyzed in accordance with Table 3-2.

1. Using a bailer or dip jar, collect a water sample from its containment.
2. Fill the sample containers for volatile analyses first. Fill the 40-milliliter vials so that there is no headspace in each vial.
3. Fill the sample containers for the remaining analyses.
4. Label the containers and package the samples for shipment to the laboratory.

An AGVIQ-CH2M HILL Level B data package will be required along with appropriate QC samples for required analyses. All analytical data will be submitted by both hard copy and electronic files.

3.7 Sample Documentation

Sampling documentation will include the following:

- Numbered Chain-of-Custody Reports
- Sample Log Book, which includes the following information:
 - Name of laboratories and contacts to which the samples were sent, turnaround (TAT) requested, and data results, when possible
 - Termination of a sample point or parameter and reasons
 - Unusual appearance or odor of a sample
 - Measurements, volume of flow, temperature, and weather conditions
 - Additional samples and reasons for obtaining them
 - Levels of protection used (with justification)
 - Meetings and telephone conversations held with the NAVFAC SE, Navy Technical Representative (NTR), regulatory agencies, Project Manager, or supervisor

- Details of QC samples obtained
- Sample collection equipment and containers, including their serial or lot numbers
- Field analytical equipment, and equipment utilized to make physical measurements
- Calculations, results, and calibration data for field sampling, field analytical, and field physical measurement equipment
- Property numbers of any sampling equipment used, if available
- Sampling location identification
- Date and time of sample collection
- Description of the sample location
- Description of the sample
- Sampler(s)' name(s) and company
- How the sample was collected
- Diagrams of processes
- Maps/sketches of sampling locations
- Weather conditions that may affect the sample (rain, extreme heat or cold, wind, etc.)
- Sample Labels
- Custody Seals (minimum of two on each shipping container)

3.8 Analytical Methods

Samples will be collected for analytical methods summarized in Table 3-2.

Preliminary analytical results will be faxed to Bethany Garvey at the following fax number per the TAT listed in Table 3-2 from day of sample receipt. The final hard copy data and electronic file will be delivered to Kama White within 14 days of sample receipt.

Bethany Garvey
 Laboratory Coordinator
 CH2M HILL
 1000 Abernathy Road, Suite 1600
 Atlanta, GA 30328
 770-604-9182 ext 263
 EFax: 678-579-8176
Bgarvey@ch2m.com

Kama White
 CH2M HILL
 1000 Abernathy Road, Suite 1600
 Atlanta, GA 30328
 (770) 604-9182 ext 564
 Efax: (678) 604-9282
Kama.White@ch2m.com

4.0 Waste Management Plan

This waste management plan addresses the management and disposal requirements for wastes generated during soil sampling activities at the DRMO land sliver sites. The following wastes are anticipated to be generated during these activities:

- Lead-, arsenic-, PCB-, and PAH-contaminated soil from excavations
- Contaminated debris, which includes, but is not limited to, materials used in spill prevention and decontamination, (e.g., plastic sheeting, sorbent materials, sampling materials, and personal protective clothing)
- Water from decontamination activities

4.1 Waste Characterization

Wastes will be characterized in accordance with Section 3.0 of this Work Plan. Waste characterization information typically will be included on a waste profile form provided by the offsite facility. Wastes from this activity are assumed to be non-hazardous. AGVIQ-CH2M HILL will provide analytical data from characterization sampling and analysis. However, in some cases, facilities that are permitted to accept a specific waste material may require specific or additional analyses to evaluate the waste stream before acceptance.

Waste characterization information will be documented on a waste profile form provided by the offsite treatment or disposal facility as part of the waste acceptance process. The profile will be reviewed and approved by the AGVIQ-CH2M HILL Waste Coordinator prior to submission to the Navy for generator signature. Navy personnel will provide generator certification and/or signature wherever required. The signed profile will then be submitted to the disposal facility for acceptance approval.

The profile typically requires information including but not limited to the following:

- Generator (Navy) information including name, address, contact, and phone number
- Site name including street/ mailing address
- Process generating waste
- Source of contamination
- Historical use for area
- Waste composition (e.g., 95 percent soil, 5 percent debris)
- Physical state of waste (e.g., solid, liquid)
- Hazardous waste codes, if applicable

A facility-approved copy of the waste profile shall be received prior to scheduling offsite transportation of the waste.

4.2 Waste Management

4.2.1 Waste Storage Time Limit

Hazardous wastes are not expected during this project, but if encountered will be removed from the site within 90 days from generation. Other wastes will be removed from the site as soon as possible. The water from decontamination activities will be containerized prior to disposal and analyzed for parameters listed on Table 3-2.

4.2.2 Labels

The labeling of waste containers will be in accordance with 49 CFR 172, 173, and 178. Labels will include the type of waste, location from which the waste was generated, and accumulation start date. Containers and tanks used to store/accumulate waste (including decontamination water) will include one of the following labels:

- “Analysis Pending” or “Waste Material” - Temporary or handwritten label to be used until analytical results are received and reviewed. This label will include the accumulation start date.
- “Hazardous Waste” - Pre-printed hazardous waste labels with the following information:
 - Accumulation start date
 - Generator name
 - EPA Identification (ID) number
 - Waste codes
 - Manifest number to be added prior to transport (for containers of less than 110-gallon capacity)
- “Non-Hazardous Waste” - Preprinted labels with the following information:
 - Accumulation start date
 - Generator name
 - EPA ID number
 - Waste-specific information (e.g., contaminated soil)

Where applicable, the major hazards (e.g., flammable, oxidizer, and carcinogen) will be included on the label.

4.2.3 General Waste Management Requirements

Wastes will be accumulated in an area identified or approved by the Navy. If no area is designated, wastes will be accumulated in an area that is inaccessible to the public and that can be secured. Wastes of the same matrix, contamination, and source may be aggregated to facilitate storage and disposal.

Temporary waste accumulation areas will contain appropriate emergency response equipment. The APP (Appendix A) identifies the specific emergency response procedures and equipment. Hazardous waste accumulation areas will include fire extinguishers (in areas where wastes are known or suspected to be flammable or ignitable), decontamination equipment, and an alarm system (if radio equipment is not available to all staff working in

accumulation area). Spill control equipment (e.g., sorbent pads) will be available in the waste accumulation areas and in areas where liquids are transferred from one vessel to another.

All containers, drums, and tanks will be inspected upon arrival at the site to identify any equipment in disrepair and any contamination of contents. If upon arrival, the container holds waste or is in disrepair, it will be immediately rejected and documented.

Drums/Small Containers

The following guidelines relate to drums and small containers:

- Drums and small containers will be transported to the temporary accumulation areas on wood pallets and secured together with non-metallic banding.
- Drums will be inspected and inventoried upon arrival onsite for signs of contamination and/or deterioration.
- Adequate aisle space (e.g., 30 inches) will be provided for containers such as 55-gallon drums to allow the unobstructed movement of personnel and equipment. A row of drums should be no more than two drums wide.
- Each drum will be provided with its own label, and labels will be visible.
- Drums will remain covered except when removing or adding waste to the drum. Covers will be properly secured at the end of each workday.
- Drums will be disposed of with the contents. If the contents are removed from the drums for offsite transportation and treatment or disposal, the drums will be decontaminated prior to reuse or before leaving the site.
- Drums containing liquids or hazardous wastes will be provided with secondary containment and may not be located near a stormwater inlet or conveyance.

Soil Stockpiles

The following guidelines relate to soil stockpiles:

- Stockpiles of contaminated soil, if needed, will be located near the excavation areas and within an area of existing contamination.
- Stockpiles will be provided with liner, cover, and perimeter berm to prevent release or infiltration of liquids.
 - Minimum 20-mil polyethylene sheeting will be used for liners and 10- and 6-mil polyethylene sheeting will be used for covers.
 - The perimeter berm will be constructed of clean materials (e.g., hay bales under the liner) and allow for collection of any free liquids draining from the stockpile.
 - Accumulated free liquids will be pumped-out to a container or tank.

- Covers and perimeter berms will be secured in-place when not in use and at the end of each workday, or as necessary to prevent wind dispersion or run-off from major precipitation events.
- Construction materials for the stockpiles that contact contaminated soil will be disposed of as contaminated debris.
- Accumulation start dates will be recorded on the waste tracking log.

Inspections

Waste accumulation and equipment storage areas will be inspected at least weekly for malfunctions, deterioration, discharges, and leaks that could result in a release.

- Containers, tanks and roll-off containers will be inspected for leaks, signs of corrosion, or signs of general deterioration
- Stockpiles will be inspected for liner and berm integrity
- All areas will be inspected to ensure that good housekeeping practices are maintained

Any deficiencies observed or noted during inspection will be corrected immediately, and corrective measures documented. Appropriate measures may include transfer of waste from leaking container to new container, replacement of liner or cover, or repair of containment berm. Copies of inspection reports and corrective measures will be maintained onsite, and available for review.

Security/Emergency Response

A barrier, such as barricade tape or temporary fencing, will be provided for hazardous/ dangerous waste accumulation areas, and for other waste storage areas that are accessible to the general public. Hazardous waste storage areas will also have signs that provide 24-hour emergency contacts and telephone numbers.

Waste accumulation areas will contain emergency response equipment appropriate to the wastes' hazards. **The APP identifies the project emergency response procedures and equipment, including emergency response contacts and phone numbers.**

In addition to the APP procedures, hazardous waste accumulation areas will be provided with fire extinguishers (for wastes known or suspected to be flammable or ignitable), decontamination equipment, and an alarm system (if radio equipment is not available to all staff working in accumulation area). Spill control equipment (e.g., sorbent pads) will be available in the waste accumulation areas, and where liquids are transferred from one vessel to another.

Employee Training

Field staff that will manage hazardous waste will meet the training requirements of the Resource Conservation and Recovery Act (RCRA) through the following:

- Occupational Safety and Health Administration (OSHA) 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) training

- On-the-job training, which includes:
 - site-specific APP review – requires each site worker, and guests to review and sign the plan
 - activity hazard analysis and daily “tailgate” meetings
 - project-specific Work Plan review; e.g., this Waste Management Plan

4.3 Waste Transportation

4.3.1 Shipping Documentation

Prior to offsite disposal of any waste, a waste approval package for each waste stream will be prepared. This package will include a waste profile naming the Navy as the generator of the waste, analytical summary table(s) applicable to the waste, land disposal restriction (LDR) notification for hazardous wastes, a completed waste manifest, and any other applicable information necessary for the Navy to complete its review of the disposal package and signature as the generator. The signed profile will then be submitted to the offsite facility for acceptance and approval. Once the approval letter is received from the offsite facility, transportation can be scheduled.

Each load of waste material will be manifested prior to leaving the site. At a minimum, the manifest form will include the following information:

- Generator information including name, address, contact, and phone number, EPA ID number
- Transporter information including name, address, contact and phone number, EPA ID number
- Designated facility information including name, address, phone number, EPA ID number
- Site name including street/ mailing address
- U.S. Department of Transportation (DOT) Proper Shipping Name
- Type and number of container
- Quantity of waste (volumetric estimate)
- Task order or job number
- Profile number
- 24-hour Emergency phone number

The generator and the transporter must sign the manifest prior to the load of waste leaving the site. The original facility-signed manifest will be returned to the address of the generator.

If the signed hazardous waste manifest from the designated facility is not received within 35 days, the generator must contact the transporter or the designated facility to determine the status of the waste. If the signed hazardous waste manifest has not been received within 45 days, the generator must issue an "Exception Report" to the State of Florida, as required under RCRA.

4.3.2 Department of Transportation Requirements

Requirements under 49 CFR 171 will apply to all offsite shipments of hazardous materials. The information contained in this section is provided as a general guide. Requirements specific to each hazardous material will be determined in the field. It is the responsibility of a DOT-trained individual to ensure that the requirements of 49 CFR 171 are met.

Shipping Name

Material that exhibits one of the nine DOT hazard class characteristics (e.g., explosive, flammable, poison, combustible) is regulated under DOT rules for the transportation of hazardous material. If material is suspected to be a hazardous material, it will be shipped under the suspected hazard class.

Each shipment of a suspected hazardous material will be provided with a proper shipping name using the Hazardous Materials Table in 49 CFR 172.101. All determinations will be made by DOT-trained personnel.

Packaging, Marking, and Labeling

The shipping name, hazard class, identification number, technical names (if applicable), EPA markings and waste code numbers, and consignee/consignor designations will be marked on packages for shipment (49 CFR 172.301). Once a waste is characterized, reference will be made to the Hazardous Materials Table in 49 CFR 172.101 to determine the appropriate label.

Placards

Appropriate placards will be determined by DOT-trained personnel. Specific placard descriptions are found starting at 49 CFR 172.521. If a placard is required, it will be affixed on each side and each end of the vehicle.

4.4 Transporter Requirements

Each transportation vehicle and load of waste will be inspected before leaving the site and documented. The quantities of waste leaving the site will be recorded on a transportation and disposal log. A contractor licensed for commercial transportation will transport non-hazardous wastes. In the event that wastes are hazardous/dangerous, the transporter will have a EPA Identification number, and will comply with transportation requirements outlined in 49 CFR 171-179 (DOT), 40 CFR 263.11 and 263.31 (Hazardous Waste Transportation).

The transporter will be responsible for weighing loads at a certified scale. For each load of material, weight measurements will be obtained for each full and empty container, dump truck, or tanker truck. Disposal quantities will be based on the difference of weight measurements between the full and empty container, or dump truck. Weights will be recorded on the waste manifest and weight ticket.

The transporter will observe the following practices when hauling and transporting wastes offsite:

- Minimize impacts to general public traffic.

- Repair road damage caused by construction and/or hauling traffic.
- Line and cover trucks/trailers used for hauling hazardous or regulated waste to prevent spills or releases.
- Decontaminate vehicles prior to re-use, other than hauling contaminated waste.
- Ensure seals on trucks transporting liquids are in good condition.

Wastes or materials from other sites may not be combined with wastes generated during this project.

All personnel involved in offsite disposal activities will follow safety and spill response procedures outlined in the APP.

4.4.1 Spill Reporting

In the event of a spill or release of waste during transport, the transporter will immediately notify the State (as required by the state of Florida or other state if applicable) and AGVIQ-CH2M HILL. The following information about the spill will be reported and recorded:

- Type of material (for example, soil, sludge, or water) and contaminant
- Location
- Estimated volume
- Media affected (for example, spilled on concrete pad or soil)
- Time of spill/release
- Final disposal of spilled material

The transporter will also report a spill or release of hazardous waste, hazardous material above and RQ and oil, as required, to:

National Response Center (NRC) at 800-424-8802 or 202-426-2675

The transporter will also report in writing, as required by 49 CFR 171.16, to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590. A copy of the NRC report will also be provided to the NAS Key West Hazardous Waste Manager and NAVFAC SE.

4.4.2 Spill Response

The transporter will clean up any spill or release of waste (including soil or water) that occurs during transportation, or take such action as may be required or approved by federal, state, or local officials. Spilled waste will be immediately cleaned up, including soils on the outside of the trucks, the truck and/or container, or road surface. Where appropriate, the spilled material will be returned to the original waste container. In any case, the spilled material will be properly contained and disposed.

4.5 Disposal of Waste Streams

Offsite treatment, disposal, or recycling facilities will use the waste profile and supporting documentation (e.g., analytical data) to determine whether a waste will be accepted. The following is a summary of wastes and anticipated treatment, disposal, or recycling requirements:

- **Excavated Soil.** Non-hazardous contaminated soil will be disposed offsite at a permitted Subtitle D facility. Used personal protective equipment (PPE) will be disposed of with this soil.
- **Aqueous Waste.** Aqueous wastes from decontamination will be disposed of offsite a permitted wastewater treatment facility.
- **Miscellaneous Waste.** Other miscellaneous uncontaminated solid waste will be disposed in trash receptacles on base.

Subcontractors will not transport any waste from the base without prior approval from AGVIQ-CH2M HILL and/or the Navy.

4.6 Recordkeeping

The following records and documents will be maintained:

- Transportation and offsite disposal records, including:
 - Waste Tracking Log
 - Profiles and associated characterization data
 - Manifests, LDR notifications/certifications (for hazardous/dangerous waste), bills of lading, and weight tickets
 - Offsite facility waste receipts, certificates of disposal/destruction/recycle
- Training records
- Inspection records

4.7 Waste Tracking Log

A Waste Tracking Log will be used to track waste from generation to final disposition. Wastes will be logged on this form the day waste is generated and placed into containers. Transportation of wastes will be inventoried the day of transportation from the site using the Waste Tracking Log. The final disposition of a waste will be documented on the Tracking Log using the Certificate of Disposal.

5.0 Environmental Protection Plan

The Environmental Protection Plan addresses general procedures that will be implemented to prevent pollution and protect the environment. The purpose of this plan is to provide specific requirements/procedures to protect the environment during soil sampling at the DRMO land sliver sites in NAS Key West, Key West, Florida.

5.1 Regulatory Drivers

Cleanup goals were identified to be conservatively protective of all potential receptors in the area. Therefore, residential land use based target levels were selected from the FDEP Direct Exposure Residential SCTLs for the site COCs. The cleanup goals for arsenic, lead, PAHs, and PCBs in surface and subsurface soil were selected from the FDEP Direct Exposure Residential SCTLs from Table II from Chapter 62-777 FAC (FDEP, 2005), and are listed below:

- Arsenic – 2.1 milligrams per kilogram (mg/kg)
- Lead – 400 mg/kg
- PAHs as BEQs – 0.1 mg/kg
- PCBs – 0.5 mg/kg

Arsenic also occurs in background soils at levels similar to Direct Exposure Residential SCTLs. Therefore, natural variability in measured concentrations in individual samples will be taken into account for low level arsenic exceedances above Direct Exposure Residential SCTLs.

5.2 Protection of Air Resources

Excavation activities will be kept under surveillance, management, and control to minimize the discharge of any air pollutants. The following general practices will be implemented to protect air resources:

- Excavation equipment will be maintained within manufacturer's design limits to ensure minimal discharge of exhaust emissions.
- Dust emissions will be controlled during earth disturbing activities using water truck or hose nozzle spray applications of water.
- Traffic routes will be designated to limit the area that is disturbed.
- Haul roads will be maintained and watered to reduce dust, as necessary.
- Travel speeds over unpaved areas will be limited to reduce dust levels.
- Burning will not be allowed as a means of clearing.
- Equipment will be operated in such a manner as to minimize airborne particulates whenever possible (e.g., the drop height of excavators will be limited).

Additionally, air monitoring will be conducted during excavation activities in accordance with Section 9.33.9 of the APP. Air will be monitored at stations upgradient and downgradient of the excavation areas. Personal air monitors will also be worn by onsite workers. If the action levels specified in the APP are exceeded, work will be stopped until which time it has been determined activities can continue in a safe manner.

5.3 Protection of Water Resources

The primary water resource concern during excavation activities is the control of stormwater run-on and runoff. Other water resource issues such as discharges to a waterway or streambed are also a concern and will be discussed as needed with the AGVIQ-CH2M HILL Environmental Compliance Manager.

To reduce erosion, and control storm water run-on and run-off during any activity that will disturb that land, the following structural and non-structural controls will be implemented as appropriate:

- Minimizing the area of bare soil exposed at one time (i.e., phased grading)
- Perimeter controls (e.g., drainage diversions)
- Sediment basins and traps
- Silt fences at excavations
- Covers for stockpiles (to prevent leaching of contaminants from stockpiles)
- Site restoration (e.g., regrading)

5.4 Protection of Land Resources

Land resources (e.g., trees and shrubs) will be preserved in their present condition or restored as near as possible to their natural appearance. Trees outside of any clearing limits will be protected during excavation or filling activities within the root zone, wherever possible. No ropes, cables, or guy lines will be fastened to or attached to any existing trees for anchorage unless specifically authorized by the Navy. Where authorized, the trunk will be wrapped with sufficient thickness of a material such as burlap or rags over which softwood cleats will be tied before any rope, cable, or wire is placed. Where trees may be defaced, bruised, injured, or otherwise damaged by equipment or construction operations, boards, planks, or poles may be placed around them for protection. Rocks that are displaced into uncleared areas will be removed. Monuments, markers, or other similar structures will be protected before beginning excavation operations.

5.5 Protection of Fish and Wildlife

Excavation operations will be managed in such a manner as to minimize interference with fish and/or wildlife habitat. Care will be taken to verify that temporary erosion and sediment controls are installed to prevent stormwater discharges to any adjacent ponds or wetlands. Excavation operations will be monitored and reorganized as necessary to prevent negative effects to identifiable wildlife activity.

5.6 Spill Prevention and Control

The provisions for spill prevention and control establish minimum site requirements. Refer to the APP (Appendix A) for emergency response procedures and further reporting requirements.

In the event of a "release" of any potentially hazardous waste, chemical, or material, AGVIQ-CH2M HILL will report the occurrence to the Contracting Officer or the designated representative as indicated in the APP. The definition of a release includes any "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposal into the environment (including the abandonment or discarding of barrels, containers, and other closed containers)" of any potentially hazardous chemical, substance, and/or material. The APP identifies the hazardous chemicals and materials anticipated to be used in work at NAS Key West. The AGVIQ-CH2M HILL Regulatory Compliance Manager will be contacted for questions in regard to other chemicals and/or materials.

5.7 Spill Prevention

All fuel, chemical, and waste storage areas will be properly protected from onsite and offsite vehicle traffic. All tanks (including fuel storage and waste storage) must be equipped with secondary containment. These tanks must be inspected daily for signs of leaks.

Accumulated water must be inspected for signs of contamination (e.g., product sheen, discoloration, and odor) before being discarded. Fire protection provisions outlined in the APP (Appendix A) must be followed.

Chemical products must be properly stored, transferred, and used. If chemical product use occurs outside of areas equipped with spill control materials, adequate spill control materials must be maintained at the local work area.

5.8 Spill Containment and Control

Spill control materials will be maintained in the support zone, at fuel storage and dispensing locations, and at waste storage areas. Incidental spills will be contained with sorbent and disposed of properly. Spilled materials must be immediately contained and controlled. Spill response procedures include:

- Immediately warn any nearby workers and notify site superintendent.
- Assess the spill area to ensure that it is safe to respond.
- Evacuate area if spill presents an emergency.
- Ensure any nearby ignition sources are immediately eliminated.
- Stop source of spill.
- Establish site control for spill area.
- Contain and control spilled material through use of sorbent booms, pads, or other material.

- Use proper PPE in responding to spills.

5.9 Spill Cleanup and Removal

All spilled material, contaminated sorbent, and contaminated media will be cleaned up and removed within a 24-hr period (if possible). Contaminated spill material will be drummed, labeled, and properly stored until the material is disposed of. Contaminated spill material will be managed as waste (see Section 4.0 Waste Management Plan) and disposed of according to applicable federal, state, and local requirements.

6.0 Quality Control Plan

This Quality Control Plan identifies the quality administrators, the project organization for the work to be completed under TO No. JM31, and the definable features of work (DFOWs) for the project.

The Submittal Register, included in Appendix B of this Work Plan, documents submittals in accordance with the AGVIQ-CH2M HILL Contract Management Plan (AGVIQ-CH2M HILL, 2010b). AGVIQ-CH2M HILL, the Navy, or others will approve submittals as identified in the Submittal Register. All approved submittals will be distributed by AGVIQ-CH2M HILL to the appropriate Navy personnel, the project site, and to the project file.

The program-specific project organization chart (Figure 6-1) depicts the chain of command for this TO and the individuals responsible for executing the work as indicated. Individual roles and responsibilities of TO personnel are summarized in Table 6-1.

6.1 Project QC Manager

Mr. Randy Dumaop will serve as the Project QC Manager. A Project QC Manager Appointing Letter for this TO is attached in Appendix B.

6.2 Testing Requirements

The project activities will include field and laboratory testing of soil and liquids. The field measurements will be conducted in accordance with QC requirements specified in FDEP Standard Operating Procedures, FDEP DEP-SOP-001/01 (FDEP, 2008), and in EPA Region 4 Field Branches *Quality System and Technical Procedures* (EPA, 2007). The more stringent of the two documents will apply. The Testing Plan and Log to track sample collection is included in Appendix B.

6.2.1 Environmental

A laboratory accredited by the Department of Defense Environmental Laboratory Accreditation Program (DOD ELAP), and certified in the State of Florida will be used for all sample analyses.

6.3 Construction Inspection

The construction inspections anticipated for the excavation activities at NAS Key West will be performed in accordance with the three phases of control while performing the work. The activities included in this Work Plan are mobilization and site preparation, soil sampling, waste sampling, waste management, and demobilization. The tasks associated with the definable work items are described below.

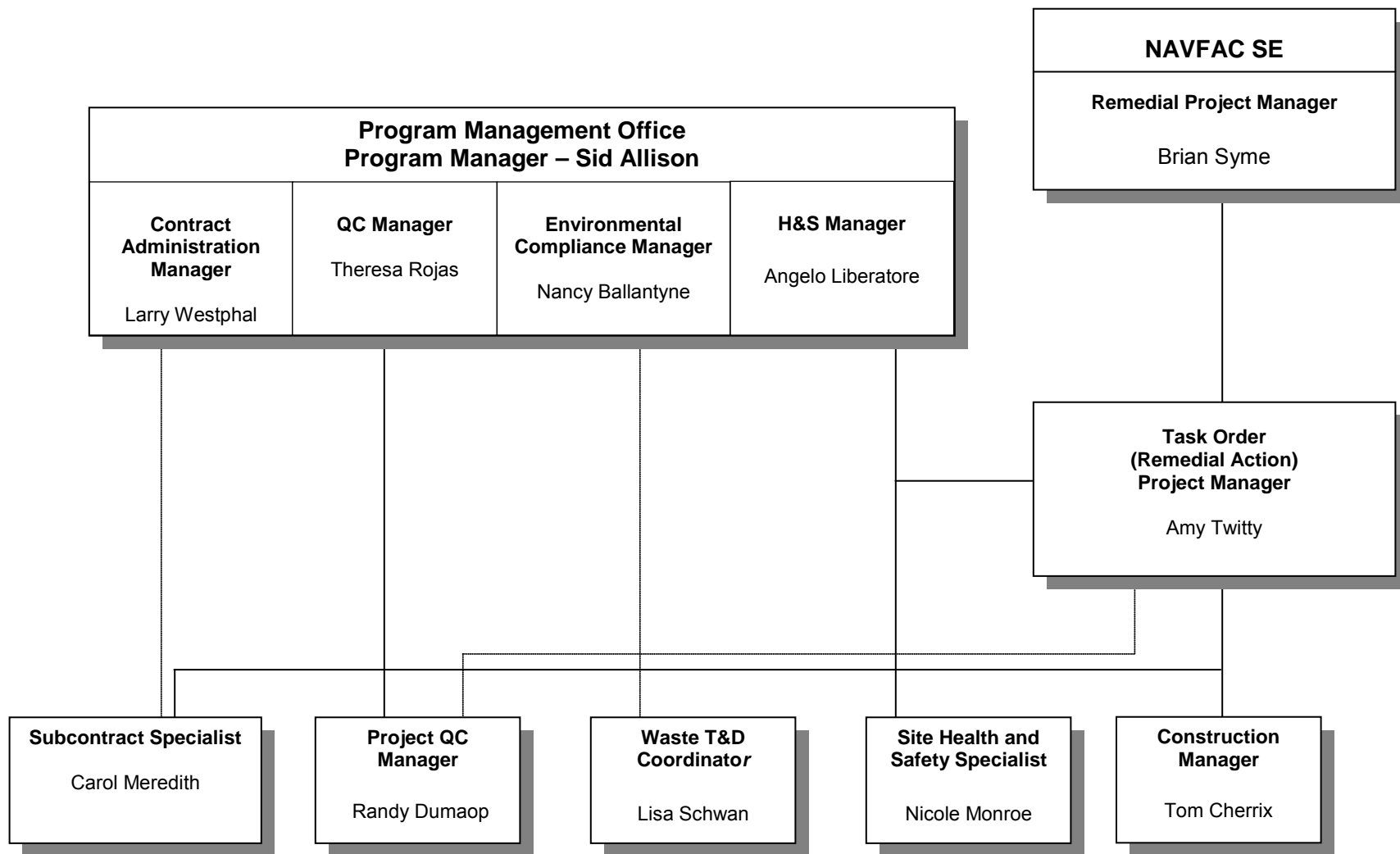


FIGURE 6-1
Project Organization Chart

TABLE 6-1
Roles, Responsibilities, and Authorities of Key Project Personnel

Role	Responsibility	Authority
Project Manager	<ul style="list-style-type: none"> • Management and Technical Direction of work • Communicate with NAVFAC SE Remedial Project Manager (RPM) and Technical Representative (NTR) • Oversee subcontractor performance • Select TASK Order (TO) staff • Develop TO Work Plan and supporting plans • Meet TO Performance Objectives • Prepare status reports • Prepare Field Change Requests 	<ul style="list-style-type: none"> • Approve subcontractor selection • Approve invoices to NAVFAC SE • Approve TO baseline schedule • Stop work at the site for any reason • Approve payment to vendors and suppliers • Approve payment to subcontractors • Review technical qualifications of subcontractors • Respond to Design Change Notices
Construction Manager	<ul style="list-style-type: none"> • Accept responsibility for all site activities • Provide direction to subcontractors • Act for Project Manager • Provide daily status reports • Conduct daily safety meetings • Review subcontractor qualifications • Stop work for unsafe conditions or practices 	<ul style="list-style-type: none"> • Stop work for subcontractors • Approve corrective action for site work-arounds • Approve materials and labor costs for site operations • Resolve subcontractor interface issues • Approve daily and weekly status reports
Project QC Manager	<ul style="list-style-type: none"> • Monitor and oversee subcontractor compliance with scope of work • Review requests for changes in scope of work • Recommend improvements in work techniques or metrics • Recommend work-around to Site Superintendent • Monitor and report on subcontractor quality and quantities • Audit subcontractors offsite fabrication • Maintain Submittal Register • Participate in Incident-Free Operations conference call 	<ul style="list-style-type: none"> • Complete daily compliance report • Monitor and report on subcontractor quality and quantities • Audit subcontractors offsite fabrication • Maintain Submittal Register • Stop work for non-compliant operations • Maintain Rework Items list • Stop work for non-compliant operations
Site Health and Safety Specialist	<ul style="list-style-type: none"> • Monitor and report on subcontractor safety and health performance • Record and report safety statistics • Conduct needed site safety and health orientation • Stop work for unsafe practices or conditions 	<ul style="list-style-type: none"> • Stop work for unsafe practices or conditions • Approve subcontractor site-specific Accident Prevention Plan • Set weekly safety objectives • Approve resumption of work for resolved safety issues
Subcontract Specialist	<ul style="list-style-type: none"> • Prepare bid packages • Purchase disposable materials • Maintain subcontract log • Approve payables for disposable items • Maintain government property records 	<ul style="list-style-type: none"> • Coordinate project scheduling • Accept responsibility for site cost tracking and reporting • Maintain record of site purchases

6.3.1 Pre-Excavation Waste Characterization and Backfill Sampling

AGVIQ-CH2M HILL will collect representative in situ samples of future soil waste and ship them to the offsite laboratory for analyses. Additionally, representative samples will be collected from potential offsite borrow pit(s) for backfill. The Project QC Manager will observe sample collection activities and will maintain the associated documentation records throughout each sampling event. The sampling will be conducted for waste characterization purposes. Sample collection and documentation will follow protocols included in the SAP of this Work Plan. Environmental samples will be collected in accordance with EPA and FDEP methods and procedures. Other controls will include but are not limited to maintaining a chain of custody; proper handling, packing, and shipping; and the use of a certified offsite laboratory.

Analytical reports from the approved laboratory will be reviewed for accuracy and quality. If required, data validation information from the laboratory will be reviewed to resolve discrepancies in the analytical data. AGVIQ-CH2M HILL Quality Assurance (QA) personnel will validate laboratory data and field sampling results. A Monthly Summary Report of Field Tests (Appendix B) will be completed and returned to the Project Manager once the Follow-up Phase is complete.

Preparatory Phase

The preparatory phase for sample collection activities includes a review of the sampling procedures provided in the SAP, verifying acceptance of the selected laboratory for offsite sample testing, and confirming that the appropriate equipment and materials are available to complete the sampling activities. An AGVIQ-CH2M HILL Project Chemist will schedule and coordinate data management with the offsite laboratory project manager and the AGVIQ-CH2M HILL quality assurance group.

Initial Phase

Samples will be collected and subsequently analyzed at an approved laboratory in accordance with methods outlined in Section 3.0 Sampling and Analysis Plan. Sample collection activities including proper chain-of-custody documentation will follow the protocols outlined in the SAP. Contractor Production and Contractor Quality Control Reports (Appendix B) will be completed on a daily basis for submittal to the Remedial Project Manager. The project QC Manager shall observe the sampling activities to ensure that the protocols are correctly followed. Any deviations will be corrected and documented.

Follow-up Phase

Sample collection locations and activities will be properly documented throughout the sampling events. Analytical reports from the approved laboratory will be reviewed for accuracy and completeness. If required, data quality and QA information from the laboratory will be reviewed to verify discrepancies in the analytical data. AGVIQ-CH2M HILL QA personnel will review and tabulate laboratory confirmation data and field sampling results. Environmental samples will be collected in accordance with EPA and FDEP methods and procedures.

QC Procedures for Characterization and Backfill Sampling

Task	Procedures/ Details
Characterization Sampling	<ul style="list-style-type: none">• Perform waste characterization sampling in accordance with disposal facility requirements.• Ensure sample locations within defined excavation limits.• Verify laboratory and qualifications.• Verify appropriate sampling equipment.
Backfill Sampling	<ul style="list-style-type: none">• Perform backfill sampling in accordance with the SAP• Verify laboratory and qualifications.• Document location of offsite borrow source with name, map and directions; sketch sample locations.• Verify appropriate sampling equipment.

6.3.2 Mobilization/Site Preparation

As part of the mobilization activity, a pre-construction meeting will be held to review the preparedness to begin the project and the procedures and schedule to complete the project. The preparedness check or Preparatory Phase Report (Appendix B) will verify that the permitting/approvals and subcontractors are in place for the planned remediation activities and that the materials and equipment mobilized to the field have been inspected, are in conformance with the project specifications, and are in good working condition to commence the work.

QC Procedures for Mobilization/Site Preparation

Task	Procedures/ Details
Pre-Construction Meeting	<ul style="list-style-type: none">• Verify utility clearance from the Sunshine State One Call of Florida, and a third-party utility locale.• Verify schedule with subcontractors and verify rental materials to be used for the investigation.• Verify excavation permit and utility clearance from Environmental Division Public Works Center.• Verify designated locations of equipment layout, material and waste staging, and decontamination.
Site Walk	<ul style="list-style-type: none">• Verify feasibility of excavation limits.• Verify utility location and markings.• Verify site layout plan.• Verify Environmental Conditions Report.
Pre-Investigation Submittals	<ul style="list-style-type: none">• Subcontractor plans and specifications.• Subcontractor personnel qualification and certifications.

6.3.3 Soil Excavation and Backfill

Soils will be excavated from select areas of with lead concentrations above the FDEP Direct Exposure Residential SCTLs. The spoils from the excavation activities will be either direct loaded, or stockpiled in lined waste stockpiles and managed, transported, and disposed of in accordance with Section 4.0 Waste Management Plan of this Work Plan.

Preparatory Phase

The preparatory phase will include the following: a review of the relevant Activity Hazard Analyses (AHAs), verifying acceptance of the selected laboratory, a review of the requirements provided in the Work Plan and the site-specific APP (Appendix A); verifying

acceptance and approval of the utility clearance; determining status of borrow source for use as backfill; and confirming that craftsmen are available to complete the work. Containers and waste staging areas will be prepared and managed in accordance with the protocols of the Waste Management Plan.

Initial Phase

As the excavation activities proceed, the Project QC Manager will conduct initial inspections and monitor the work completed to verify conformity with this Work Plan. Initial inspections will include the following items to ensure that they are completed:

- All open excavations are covered with polyethylene liners until backfilled to minimize the collection of water in the event of rain and to minimize dust from the open excavations.
- Necessary dust control and suppression measures are taken (e.g., wetting, covering excavation and stockpiles with polythene liners, minimizing the number of open excavations at a given time, and backfilling the area immediately after excavation is complete.
- Backfill is not to be placed in excavations with standing water or unstable sub-grade conditions.
- Backfill is placed in a manner that does not disturb or damage surrounding structures or utilities.
- Soil moisture content and compaction of backfilled material is maintained; however, field testing is not required.
- Excavated areas are graded to provide positive storm water drainage and prevent ponding or pooling.

Any deficiencies noted will be documented and corrected as necessary.

Follow-up Phase

The Project QC Manager will be responsible for the ongoing inspection of excavation activities. Surveillance will verify that the excavation activities, including the limits and depths of soil excavation are being completed according to the Work Plan. Excavated soil volume moved to the stockpiles will be recorded. Deficiencies will be documented and corrected as necessary.

QC Procedures for Excavation and Site Restoration

Task	Procedures/ Details
Excavation and Site Restoration	<ul style="list-style-type: none">• Inspect placement of erosion control measures.• Maintain chronological journal of visual observations while work activities progress.• Record waste volumes removed from the excavation.• Verify approval to backfill completed excavations and determine adequate soil compactive effort during backfill.• Verify dimensions of the excavations• Inspect decontamination of equipment between excavation sites

6.3.4 Soil Confirmation Sampling

Soil samples will be collected during the excavation, prior to backfilling operations. Environmental samples will be collected in accordance with EPA and FDEP SOPs as described in Worksheet 21 in the UFP-SAP (AGVIQ-CH2M HILL, 2010a). Other controls will include but are not limited to maintaining a chain of custody; proper handling, packing, and shipping; sampling performed by qualified persons; and the use of certified laboratories.

Preparatory Phase

The preparatory phase for sample collection activities includes a review of the relevant Activity Hazard Analyses (AHAs), a review of sampling procedures provided in the UFP-SAP (AGVIQ-CH2M HILL, 2010a), verifying acceptance of the selected laboratory, and confirming the appropriate equipment and materials are available to perform the sampling activities.

Initial Phase

Soil samples will be collected and subsequently analyzed at an approved laboratory in accordance with methods outlined in the UFP-SAP. Sample collection activities, including proper chain-of-custody documentation, will follow the protocols outlined in the UFP-SAP (AGVIQ-CH2M HILL, 2010a). Contractor Production and Contractor Quality Control Reports (Appendix B) will be completed on a daily basis for submittal to the Remedial Project Manager.

Follow-up Phase

The Project QC Manager will observe sample collection activities and will maintain the associated documentation records throughout each sampling event. Analytical reports from the approved laboratory will be reviewed for accuracy and quality. If required, data validation information from the laboratory will be reviewed to resolve discrepancies in the analytical data. AGVIQ-CH2M HILL Quality Assurance (QA) personnel will validate laboratory data and field sampling results. A Monthly Summary Report of Field Tests (Appendix B) will be completed and returned to the Project Manager once the Follow-up Phase is complete.

QC Procedures for Field Sampling

Task	Procedures/ Details
Field Sampling	<ul style="list-style-type: none">• Verify laboratory credentials• Lay out sample locations in accordance with Figures 2-4 and 2-5• Verify appropriate sampling equipment• Verify equipment decontamination• Verify that the appropriate facilities and testing equipment are available and comply with testing standards• Obtain GPS coordinates for soil borings• Verify that the field instruments are calibrated in accordance with manufacturers' recommendations• Verify that recording forms, including all test documentation requirements, have been prepared and are accurate and complete• Verify samples and QC samples are collected in accordance with the SAP and procedures

6.3.5 Waste Management

Wastes will be characterized, managed, transported, and disposed of in accordance with the SAP and Waste Management Plan of this Work Plan.

QC Procedures for Waste Disposal

Task	Procedures/Construction Details
Waste Disposal	<ul style="list-style-type: none">• Verify waste profile completion (obtain Navy Signature).• Inspect incoming transport containers for contamination.• Inspect waste transport vehicles and/or containers prior to acceptance to job site and before leaving job site.• Verify waste manifest completion (obtain Navy Signature).• Verify transporter and disposal facility certificates.• Complete waste tracking log.• Inspect waste storage area, at least weekly.

6.3.6 Demobilization

AGVIQ-CH2M HILL and its subcontractors will demobilize equipment and personnel from the site following completion of the work activities identified in this Work Plan. The Project QC Manager will verify that the objectives of associated sampling activities have been met.

Preparatory Phase

The preparatory phase will include a review of decontamination procedures, the site-specific APP and AHA forms, and the Waste Management Plan.

Initial Phase

The Site Superintendent will conduct inspections to confirm that the objectives of the decontamination/ demobilization activities have been met and that the rework items, if any, have been completed to the satisfaction of AGVIQ-CH2M HILL and NAS Key West.

Follow-up Phase

The Project QC Manager will provide continuous oversight of demobilization to verify that the work is completed in accordance with the requirements provided in the Work Plan. Daily observation will verify compliance with the objectives of the Work Plan. Deficiencies will be noted and corrected.

QC Procedures for Demobilization

Task	Procedures/ Details
Demobilization	<ul style="list-style-type: none">• Perform pre-final site inspection and develop punch list.• Inspect work areas to ensure all equipment and materials are safely removed from site.• Decontaminate equipment.• Conduct completion inspection when work is substantially complete.• Punch-lists on outstanding items.• Verify project housekeeping and final project cleaning.• Collate site records and documents.• Complete final reports and deliverables.• Complete resolution of punch-list items.• Conduct final site inspection.• Ensure orderly site demobilization.

7.0 References

AGVIQ-CH2M HILL. 2010a. *Uniform Federal Policy Sampling and Analysis Plan, Preliminary Site Assessment Former Defense Reutilization and Marketing Office Land Slivers, Naval Air Station Key West in Key West, Florida*. October.

AGVIQ-CH2M HILL. 2010b. *Contract Management Plan, Contract No. N62470-08-D-1006*. Prepared for Naval Facilities Engineering Command. July.

AGVIQ-CH2M HILL. 2011. *Sampling and Analysis Plan. Preliminary Assessment at the Former, Defense Reutilization Marketing Office Land Slivers, Naval Air Station Key West Key West, Florida, Revision 01*. June.

AGVIQ-CH2M HILL. 2012a. *Engineering Evaluation/Cost Analysis. Defense Reutilization Marketing Office Land Slivers, Truman Annex, Naval Air Station Key West, Key West, Florida, Revision No. 01*. March.

AGVIQ-CH2M HILL. 2012b. *Action Memorandum. Defense Reutilization Marketing Office Land Slivers, Truman Annex, Naval Air Station Key West, Key West, Florida, Revision No. 00*. June.

Bechtel Environmental, Inc. 1999. *Project Completion Report for Base Realignment and Closure (BRAC) Parcels Fast Track Soil Removals, Naval Air Station Key West, Florida*. June.

CH2M HILL Constructors, Inc. (CH2M HILL). 2006. *Technical Memorandum, Former Defense Reutilization and Marketing Office, Truman Annex, Naval Air Station Key West, Key West, Florida*. December.

CH2M HILL Constructors, Inc. (CH2M HILL). 2007. *Project Completion Report, Excavation of PCB and Lead-contaminated Soil at the Former Defense Reutilization and Marketing Office, Truman Annex, Naval Air Station Key West, Key West, Florida*. June.

CH2M HILL Constructors, Inc. (CH2M HILL). 2010. *Site Rehabilitation Completion Report, Former DRMO Site, Truman Annex, Naval Air Station Key West, Key West, Florida. Revision 01*. August.

Florida Department of Environmental Protection (FDEP). 2005. *Technical Report: Development of Cleanup Target Levels (CTLs) For Chapter 62-777, F.A.C.* February.

Florida Department of Environmental Protection (FDEP). 2008. *Standard Operating Procedures*. Department of Environmental Regulation. DEP-SOP-001/01. March 31.

Tetra Tech NUS, Inc. (TtNUS). 1999a. *Site Inspection Report for Nine BRAC Parcels, Naval Air Station, Key West, Florida, Revision 1*. February.

Tetra Tech NUS, Inc. (TtNUS). 1999b. *Supplemental Site Inspection Report for BRAC Parcels, Naval Air Station Key West, Florida, Revision 2*. September.

Tetra Tech NUS, Inc. (TtNUS). 2005. *Hot Spot Delineation Report and Delineation Sampling Work Plan for Truman Annex DRMO Waste Storage Area, Naval Air Station Key West, Key West, Florida*. August.

U.S. Environmental Protection Agency (EPA). 2012. Region 4 Science and Ecosystem Support Division. *Field Branches Quality System and Technical Procedures*. Available at: <http://www.epa.gov/region4/sesd/fbqstp/>.

Appendix A

Accident Prevention Plan

Accident Prevention Plan

Soil Removal at the Former Defense Reutilization Marketing Office Land Slivers Naval Air Station Key West Key West, Florida

Contract #: N62470-08-D-1006
Task Order No. JM31

Submitted to:



U.S. Naval Facilities Engineering Command – Southeast

Prepared by:



August 2012
Revision No. 01

Contents

1.0	Signature Sheets	1-1
1.1	Revisions	1-2
1.2	Introduction.....	1-3
2.0	Background Information.....	2-1
2.1	Facility and Site Background	2-1
2.1.1	Site Background	2-2
2.2	General Task Order Scope of Work	2-3
2.3	Health and Safety Plan Assumption Set.....	2-3
2.4	HAZWOPER-Regulated Tasks.....	2-4
2.5	Non-HAZWOPER-Regulated Tasks.....	2-5
3.0	Statement of Safety and Health Policy.....	3-1
3.1	Objective	3-2
3.2	Purpose	3-2
3.3	Goals	3-2
4.0	Responsibilities and Lines of Authorities	4-1
4.1	Organization and Responsibility for Health and Safety	4-1
4.1.1	Program Manager.....	4-1
4.1.2	Project Manager	4-1
4.1.3	Certified Industrial Hygienist.....	4-2
4.1.4	Health and Safety Program Administrator(s)	4-3
4.1.5	Site Supervisors.....	4-3
4.1.6	Site Safety and Health Officer.....	4-4
4.1.7	AGVIQ-CH2M HILL Program Participants	4-6
4.2	Employee Competency	4-6
4.3	Requirements for Pretask Safety and Health Analysis	4-7
4.4	Primary Lines of Authority	4-7
4.5	Non Compliance with Requirements	4-9
4.6	Managers and Supervisors Safety Accountability	4-9
5.0	Subcontractors and Suppliers	5-1
5.1	Subcontractor/Supplier Coordination and Control.....	5-1
5.2	Subcontractor/Supplier Responsibilities	5-1
6.0	Training	6-1
6.1	New Hire SOH Orientation Training	6-1
6.2	Requirements for Mandatory Training and Certificates.....	6-2
6.3	Procedures for Periodic Safety & Health Training of Supervisors and Employees.....	6-4
6.4	Requirements for Emergency Response Training.....	6-5
7.0	Safety and Health Inspections	7-1
7.1	External Inspections/Certifications	7-2
8.0	Accident Reporting and Investigation	8-1
8.1	Exposure Data (man-hours worked)	8-1
8.2	Accident Investigations, Reports and Logs.....	8-2
8.2.1	Best Management Practices for Incident Investigation	8-3
9.0	Plans Required by the Safety Manual	9-1
9.1	Layout Plans	9-1

9.2	Emergency Response Plans	9-1
9.2.1	Emergency Planning	9-1
9.2.2	Emergency Equipment and Supplies.....	9-2
9.2.3	Evacuation	9-2
9.2.4	Procedures and Tests	9-5
9.2.5	Spill Plans.....	9-5
9.2.6	Firefighting Plan	9-7
9.2.7	Posting of Emergency Telephone Numbers	9-8
9.2.8	Man Overboard / Abandon Ship.....	9-8
9.2.9	Medical Support.....	9-8
9.3	Plan for prevention of Alcohol and Drug Abuse	9-12
9.4	Site Sanitation Plan.....	9-12
9.5	Access Plan	9-12
9.6	Respiratory Protection Plan	9-12
9.7	Health and Safety Hazard Control Program	9-13
9.7.1	Constituents of Concern	9-13
9.7.2	Adverse Weather	9-13
9.7.3	Aerial Lifts	9-14
9.7.4	Air Compressor Operations	9-14
9.7.5	Asbestos	9-15
9.7.6	Biological Hazards and Controls.....	9-15
9.7.7	Buried Objects/Utilities (locating)	9-29
9.7.8	Concrete Work	9-31
9.7.9	Confined Space Entry.....	9-31
9.7.10	Cranes 9-31	
9.7.11	Demolition/Dismantling.....	9-31
9.7.12	Drilling/Direct Push Technology	9-31
9.7.13	Electrical Safety	9-31
9.7.14	Excavation Activities.....	9-33
9.7.15	Fall Protection	9-35
9.7.16	Fire Prevention.....	9-35
9.7.17	Fire Watch.....	9-36
9.7.18	Flight Line Safety	9-37
9.7.19	General Practices and Housekeeping	9-37
9.7.20	Hand and Power Tools	9-38
9.7.21	Haul Trucks	9-41
9.7.22	Heavy Equipment.....	9-42
9.7.23	Land Clearing.....	9-43
9.7.24	Lock-Out/Tag-Out.....	9-43
9.7.25	Machine Guarding.....	9-44
9.7.26	Manual Lifting	9-44
9.7.27	Noise 9-45	
9.7.28	Pressure Washing Operations.....	9-45
9.7.29	Sample Handling	9-46
9.7.30	Slips, Trips, and Falls	9-47
9.7.31	Stairways and Ladders	9-48
9.7.32	Munitions and Explosives of Concern.....	9-48

9.7.33	Vacuum Truck Operations	9-48
9.7.34	Vehicular Traffic (Exposure to).....	9-48
9.7.35	Visible Lighting.....	9-49
9.7.36	Welding or Cutting Operations	9-50
9.7.37	Working Alone.....	9-50
9.7.38	Working Around Material Handling Equipment	9-50
9.7.39	Working on or Over Water.....	9-50
9.8	Hazard Communication Program.....	9-50
9.8.1	Shipping and Transportation of Chemical Products	9-50
9.9	Process Safety Management.....	9-51
9.10	Lead Abatement Plan.....	9-51
9.11	Asbestos Abatement Plan.....	9-51
9.12	Radiation Safety Program.....	9-51
9.13	Abrasive Blasting.....	9-51
9.14	Heat/Cold Stress Monitoring Program.....	9-51
9.14.1	Heat Stress Monitoring and Prevention	9-51
9.14.2	Thermal Stress Monitoring.....	9-53
9.14.3	Cold Stress Monitoring and Prevention.....	9-54
9.15	Crystalline Silica Monitoring Plan	9-54
9.16	Night Operations Lighting Plan	9-54
9.17	Fire Prevention Plan	9-54
9.18	Wild Land Fire Management Plan	9-55
9.19	Hazardous Energy Control Plan	9-55
9.20	Critical Lift Plan	9-55
9.21	Contingency for Severe Weather Plan.....	9-55
9.22	Float Plan	9-55
9.23	Site Specific Fall Protection and Prevention Plan	9-55
9.24	Demolition Plan	9-55
9.25	Excavation/Trenching Plan	9-55
9.26	Emergency Rescue (Tunneling).....	9-55
9.27	Underground Construction Fire Prevention and Protection Plan.....	9-55
9.28	Compressed Air Plan	9-55
9.29	Formwork Shoring and Removal Plan	9-55
9.30	Precast Concrete Plan.....	9-56
9.31	Lift Slab Plans.....	9-56
9.32	Steel Erection Plans	9-56
9.33	Site Safety and Health Plan	9-56
9.33.1	Occupational Safety and Health Hazards with Site Clean-up	9-56
9.33.2	Site Description and Contamination Characterization	9-56
9.33.3	Lead Exposure Information	9-57
9.33.4	Hazard/Risk Analysis	9-58
9.33.5	Staff Organization, Qualifications, and Responsibilities	9-58
9.33.6	General and Project-Specific Training	9-59
9.33.7	Medical Surveillance	9-59
9.33.8	Personal Protective Equipment	9-59
9.33.9	Exposure Monitoring/ Air Sampling	9-63
9.33.10	Heat and Cold Stress	9-65

9.33.11	Standard Operating Safety Procedures, Engineering Controls, and Work Practices.....	9-65
9.33.12	Personal Hygiene and Decontamination.....	9-69
9.33.13	Equipment Decontamination.....	9-70
9.33.14	Emergency Equipment and First Aid	9-70
9.33.15	Emergency Response and Contingency Procedures	9-70
9.33.16	Pre-Emergency Planning	9-70
9.33.17	Personnel and Lines of Authority - Emergency Situations	9-70
9.33.18	Criteria and Procedures for Emergency Recognition and Site Evacuation	9-70
9.33.19	Decontamination and Medical Treatment of Injured Personnel	9-72
9.33.20	Route Map to Emergency Medical Facilities	9-72
9.33.21	Responsibilities	9-73
9.33.22	Training.....	9-73
9.33.23	Medical Surveillance	9-73
9.33.24	Facility/Construction Project Emergency Response	9-73
9.34	Blasting Safety Plan	9-73
9.35	Diving Plan.....	9-73
9.36	Confined Space Program	9-73
10.0	Risk Management Process	10-1
10.1	Activity Hazard Analysis	10-1
10.2	Pre-Task Safety Plans	10-2
10.3	Loss Prevention Observations	10-2
10.3.1	Deficiency Tracking System	10-3
10.4	Loss/Near-Loss Investigations.....	10-3
10.5	Drug-Free Workplace Program	10-3
10.6	Project Specific Activity Hazard Analyses.....	10-4

Attachments

- 1 APP Acknowledge Form
- 2 Subcontractor H&S Tracking Form
- 3 Project H&S Forms/Permits
- 4 Emergency Contact List
- 5 Material Safety Data Sheets
- 6 Chemical-Specific Training Form &
Project-Specific Chemical Product Hazard Communication Form
- 7 Pre-Task Safety Plan (PTSP)
- 8 Loss Prevention Observation (LPO) Form
- 9 Incident Report Form (IRF)
Loss/Near Loss Incident Report Form
Root Cause Analysis (RCA)
- 10 Hurricane Preparedness Plan

Figures

- 4-1 AGVIQ-CH2M HILL Incident Notification Process & Line Authority
- 9-1 Evacuation Route Map
- 9-2 Hospital Route Map & Directions
- 9-3 Decontamination Line

Tables

- 9-1 Site COCs
- 9-2 Personal Protection Equipment Requirements
- 9-2 Air Monitoring Requirements
- 9-4 Air Monitoring Equipment Calibration Requirements
- 10-1 Activity Hazard Analysis Basis

Acronyms and Abbreviations

AGVIQ-CH2M HILL	AGVIQ-CH2M HILL Joint Venture III
AHA	Activity Hazard Analysis
APP	Accident Prevention Plan
BBLPS	Behavior Based Loss Prevention System
BRAC	Base Realignment and Closure
CBNR	Chemical, Biological, Nuclear, Radioactive
CFR	Code of Federal Regulation
CIH	Certified Industrial Hygienist
COCs	Constituents of Concern
CPR	cardiopulmonary resuscitation
CSE	Confined Space Entry
dB	decibels
DEET	N, N-diethyl-meta-polyamide
DFOW	Definable Features of Work
DFWP	Drug Free Workplace Program
DOT	Department of Transportation
DPT	Direct Push Technology
DRMO	Defense Reutilization Marketing Office
ESC	Erosion and Sediment Control
FA-CPR	first aid and cardiopulmonary resuscitation
FDEP	Florida Department of Environmental Protection
FRP	Facility Response Plan
GFCI	ground fault circuit interrupter
GPR	ground-penetrating radar
H&S	Health and Safety
HAZWOPER	Hazard Waste Operations and Emergency Response
HBV	Hepatitis B Virus
HIV	Human Immunodeficiency Virus
HS&E	Health, Safety & Environment
HSP	Health and Safety Program (AGVIQ-CH2M HILL)
HSPA	Health and Safety Program Administrator
IDLH	Immediately Dangerous to Life and Health
IRF	Incident Report Form

Acronyms and Abbreviations (continued)

MEC	Munitions of Explosive Concern
MPPEH	Materials Presenting a Potential Explosive Hazard
MR	Munitions Response
MSDS	Material Safety Data Sheet
NAS	Naval Air Station
NAVFAC SE	Naval Facilities Engineering Command, Southeast
NIOSH	National Institute for Occupational Health
NLI	Near Loss Investigation
OEL	Occupational Exposure Limits
OSHA	Occupational Safety and Health Administration
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
POC	Point of Contact
PPE	Personal Protective Equipment
PTSP	Pre-Task Safety Plan
QCM	Quality Control Manager
RA	Remedial Action
RMP	Risk Management Process
SCTLs	Soil Cleanup Target Levels
SOP	Standard of Practice
SWO	Stop Work Order

1.0 Signature Sheets

Plan Prepared By:

Name: Josh Painter, CSP
Title: *Principal HS&E Professional*
Company: CH2M HILL Inc
Telephone: (509) 380-4166(cell)
Date: May 22, 2012

Signature: _____



Josh Painter, CSP
Health and Safety Manager

Approved By:

Name: Angelo Liberatore
Title: Health & Safety Manager
Company: CH2M HILL Constructors, Inc.
Telephone: (678) 530 4210 / (770) 335-2076 (cell)
Date: May 29, 2012

Signature: _____



Angelo Liberatore, CIH, CSP
Health & Safety Manager

Plan Concurrence:

Name: Amy Twitty
Title: Senior Project Manager
Company: CH2M HILL Constructors, Inc.
Telephone: (850) 232-0320
Date:

Signature: _____

Amy Twitty
Senior Project Manager

1.1 Revisions

Revisions Made By:

Date:

Revisions to Plan:

Revisions Approved By:

Date:

1.2 Introduction

The AGVIQ-CH2M HILL Joint Venture III Small Business Remedial Action Contractor (AGVIQ-CH2M HILL) has prepared this Accident Prevention Plan (APP) in response to Naval Facilities Engineering Command, Southeast (NAVFAC SE), to perform a Remedial Action (RA) at the Naval Air Station (NAS) Key West, Key West, Florida. This work will be performed under the terms and conditions Contract Number N62470-08-D-1006, Task Order (TO) JM31.

It is the intent of this APP to address requirements set forth by 29CFR1910, 29CFR1926 and EM 385 1-1, Appendix A.

A hardcopy of this APP, inclusive of any developed project Work Plan and its other components or technical memoranda shall be available on-site for reference by site personnel. Means and methods for completing this or subsequent tasks addressed with the project Work Plan or Project Quality Control Plan will not be further addressed in this APP.

All site personnel, including AGVIQ-CH2M HILL and subcontractors, who may be covered by this APP, must review or be provided a detailed briefing on the contents of this document and sign the Acknowledgement Form (**Attachment 1**).

2.0 Background Information

CONTRACTOR: AGVIQ-CH2M HILL Joint Venture III
Small Business Remedial Action Contract
Contract Administrative Address
1000 Abernathy Road, Suite 1600
Atlanta, GA 30328
Primary Contact Name: Amy Twitty
Title: AGVIQ-CH2M HILL Project Manager (overall)
Telephone: (850) 232-0320
Facsimile: (334) 273-7515

CONTRACT #: N62470-08-D-1006, TO JM31

PROJECT NAME: Soil Removal at the Former Defense Reutilization Marketing Office
(DRMO) Land Slivers
NAS Key West
Key West, Florida

2.1 Facility and Site Background

Key West is bounded by the Atlantic Ocean on the east and southeast, the Gulf of Mexico to the north and west and the Florida Straits to the south. Key West is located 153 miles southwest of Miami and 90 miles north of Cuba making it the southernmost city in the continental United States. Key West lies at the western end of a 125-mile chain of keys or low islands which extends southwestward from the southeastern tip of mainland Florida. The Keys are linked by the Overseas Highway whose bridges and causeways straddle the numerous gaps in the chain. The average elevation of the Florida Keys is 5 feet above mean sea level. Key West is mostly 6 to 8 feet in the east, rising in the west to a plateau on the site of the old town of 12 to 18 feet.

The NAS Key West is located approximately 5 miles east northeast of the city of Key West on Boca Chica Key. NAS Key West has several annexes which are located in Key West itself and consists of five different bases. The NAS supports the Navy's air units and is host to many tenant commands, including Joint Interagency Task Force East. NAS Key West is a premier pilot training facility for transient tactical aviation squadrons. It has sustained Navy activity since 1823. NAS Key West maintains and operates facilities and provides service and materials to support operation of aviation activities as designated by the Chief of Naval Operations and supports or provides navigational assistance, radar advisories and communications control, fighter missions, metrological and oceanographic operations, as well as radar surveillance and security operations.

2.1.1 Site Background

The project area consists of two slivers of land (north and south) adjacent to the City-owned portion of the former DRMO (see Work Plan for site map). The southern sliver is approximately 600 feet long by 25 feet wide; the northern sliver is approximately 200 feet long by 30 feet wide. In June 2001, the Navy removed the existing chain link fence around the former DRMO perimeter and replaced it with an “aesthetically pleasing fence.” Prior to transfer of property to the City of Key West, the purpose of the existing fence was to limit Fort Zachary Taylor State Parks’ patrons from accessing other Navy property. The original fence did not mark any property lines (except roughly the easement that the Navy gave the State Park). The aesthetically pleasing fence was built on the property line described in the transfer documents to the City. Since the new fence did not encompass as much property as the original fence, the “land slivers” were created outside of the new fence area; these slivers were retained by the Navy.

The former DRMO site is approximately 6.25 acres in area and was formerly used as a storage facility for new and used military equipment. Over time, contaminants were released to the DRMO site soils. An elevated water storage tank was formerly located at the site and was removed in 2003. This elevated tank was historically painted with lead-based paint. When the tank was demolished, lead from chipped paint was released to the surrounding soil. During a subsequent soil assessment and remediation project, confirmation sampling identified polychlorinated biphenyls (PCBs) as an additional contaminant of concern (COC) in the soil at the site. PCBs also were found in backfill material placed at the site during the 1999 interim removal action. Further delineation of the extent of PCB and lead-contaminated soil at the site was conducted and a soil removal action was performed on the City-owned portion of the former DRMO, which resulted in removal of surface soil COCs to residential criteria. Soil contaminants at the DRMO include lead, arsenic, PCBs, and polycyclic aromatic hydrocarbons (PAHs).

DRMO investigation activities indicated that the two land slivers had levels of contaminants, specifically PCBs, PAHs, and some inorganics above the Florida Department of Environmental Protection (FDEP) Residential and Industrial Residential Soil Cleanup Target Levels (SCTLs) from Chapter 62-777 of the Florida Administrative Code (FAC) (2005). The slivers of land were located outside of the DRMO footprint which was not covered under the Base Realignment and Closure (BRAC) remedial activities. Therefore these areas were not remediated to FDEP residential soil cleanup criteria. The vertical and horizontal extent of these contaminants in soil at the DRMO land sliver areas has not been delineated. A detailed description of the site including site maps can be found in the project Work Plan.

In 2010 and 2011, AGVIQ-CH2M HILL collected soil samples from both the north and south DRMO slivers, and analyzed them for arsenic, lead, PAHs, and PCBs in accordance with AGCIQ-CH2M HILL’s Uniform Federal Policy Sampling and Analysis Plan and corresponding Preliminary Assessment Work Plan. Samples exceeded the FDEP Residential SCTLs for arsenic, lead, PAHs, and PCBs at both slivers. PAHs were the only constituents identified as soil exceedances above the Industrial SCTLs at the north sliver, and PAHs and

PCBs had levels above the Industrial SCTLs in some samples from the south DRMO sliver. Figures 4 and 5 present the soil exceedances at the north and south DRMO slivers, respectively. Soil samples were also analyzed for lead, PAHs, and PCBs by the Synthetic Precipitation Leaching Procedure (SPLP) for potential for soil-to-groundwater leachability. None of the SPLP results exceeded the FDEP Groundwater Cleanup Target Levels for Low Yield/Poor Quality. Based on the FDEP Residential SCTLs, the removal areas have been identified to reduce risk associated with surface and subsurface soil to acceptable levels.

2.2 General Task Order Scope of Work

The objectives of the project and means and methods for completing the executable work under this TO are detailed within the project Work Plan (Preliminary Assessment) and will not be elaborated upon further in this APP. It is anticipated that remedial actions at the DRMO land slivers will include the excavation of soil that contains concentrations of contaminants above unacceptable risks to residential users. AGVIQ-CH2M HILL will perform site preparation activities including; (1) attaining necessary permitting to perform the work; (2) identify site utility and structure clearance as necessary for excavation area(s); (3) establish site security, which includes securing the excavation site; and (4) set up of temporary facilities. A summary of the major Definable Features of Work (DFOWs) associated with the execution of this TO are as follows:

- Mobilization and site preparation
 - Erosion/Storm water controls installation
 - Utility clearance/locate and land survey operations
 - Decontamination pad installation
- Excavation in impacted surface and subsurface soil
 - Mechanical Soil Excavation
 - Containerization, Transport, and Disposal of waste
- Soil Sampling
 - Pre-excavation in situ waste characterization and backfill sampling
 - Post excavation confirmation sampling
- Backfill and Site Restoration
- Decontamination and Demobilization.

2.3 Health and Safety Plan Assumption Set

The assumption set for the development of this APP is that AGVIQ-CH2M HILL site personnel and subcontractors controlled by AGVIQ-CH2M HILL who may be covered by this APP are based on the following:

- There is no potential Chemical, Biological, Nuclear or Radioactive (CBNR) weapon/agent or waste exposure to AGVIQ-CH2M HILL or subcontractor personnel who may be associated the execution of this contract work.
- Site personnel shall execute good personal hygiene practices to facilitate a negative exposure to site dust, soil, water or sediment via incidental dermal or ingestion exposure vectors.

- It is understood that NAVFAC prime contract # N62472-08-D-1006 issued for the AGVIQ-CH2M HILL Small Business Remedial Action Contract (SBRAC) was issued prior to September 15, 2008, and as such the 3 November 2003 version of the EM 385 1-1 should be applicable to this work. However, AGVIQ-CH2M HILL will endeavor to implement the September 15, 2008 version for this project where ever it is feasibly possible.
- It is assumed that the performance of Non-HAZWOPER regulated tasks in section 2.5 below, that workers will not be exposed to residual/released site COC during the execution of these tasks. If this is not the case, then these functions will be considered HAZWOPER-Regulated under section 2.4 of this APP.
- Where use of personal protective equipment (PPE) equipment is specified, it will be used in accordance with Section 9.33.8 of this APP.
- Where the use of air monitoring equipment is specified, it shall be in accordance with Section 9.33.9 of this APP. Action levels and action level responses defined by this APP shall be adhered to. Air monitoring data collected during the execution of the task order work phases shall be documented and included for the project file.
- Work is being performed in an open air, well ventilated environment.

In the event that the above assumption set is not verified, the conditions of this APP will be re-evaluated and amended as necessary to address applicable hazards that maybe associated with newly encountered project conditions or newly defined project tasks. In the event that it is determined that site soil, ground water, or sediment may be impacted by COCs concentrations in excess of established Occupational Exposure Limits (OELs) or CBNR exposure at any level work shall cease until such engineering or administrative control measures and/or PPE are implemented to reduce potential worker exposures to acceptable levels.

Adjustments to this APP to mitigate or address potential OEL/CBNR exposure of workers or involving modifications to worker PPE or worker/site exposure monitoring (air monitoring) procedures will require review and approval by the Program Certified Industrial Hygienist (CIH).

2.4 HAZWOPER-Regulated Tasks

Where certain work tasks include the handling, removal, containment, investigation, or other physical site management of hazardous waste/material or other regulated materials, execution of such tasks and potential employee exposure to chemical hazards associated with these tasks may be regulated under 29 Code of Federal Regulation (CFR) 1910.120/29 CFR 1926.65. For this task order, following activities will be considered Hazardous Waste Operations (HAZWOPER)-regulated tasks because of the potential worker exposure to identified site contaminants.

- Mobilization and site preparation (when in impacted areas)
 - Erosion/Storm water controls installation
 - Utility clearance/locate and land survey operations
 - Decontamination pad installation

- Excavation in impacted surface and subsurface soil
 - Mechanical Soil Excavation
 - Containerization, Transport, and Disposal of waste
- Soil Sampling
 - Pre-excavation in situ waste characterization and backfill sampling
 - Post excavation confirmation sampling
- Decontamination and Demobilization.

2.5 Non-HAZWOPER-Regulated Tasks

Under specific circumstances, the training and medical monitoring requirements of HAZWOPER regulations under 29 CFR 1910.120/29 CFR 1926.65 may be not applicable. Where this is considered, it must be demonstrated that the assigned tasks can be performed without the possibility of exposure to chemical hazards in order to use personnel who do not meet the criteria established by these standards. A determination from the Health and Safety Manager (HASPA) or program/project CIH is required before project tasks are conducted by personnel who do not meet the requirements of 29 CFR 1910.120/29 CFR 1926.65 and where there is question to potential exposure to chemical hazards. Where it is unlikely or not possible that workers could not be exposed to site chemical hazards during the normal execution of assigned tasks, the task can be considered a Non-HAZWOPER Regulated Task. For this project, the following activities will be considered Non-HAZWOPER Regulated Tasks.

- Mobilization and site preparation
 - Erosion/Storm water controls installation
 - Utility clearance/locate and land survey operations
 - Decontamination pad installation
- Backfill and Site Restoration
- Demobilization operations.

3.0 Statement of Safety and Health Policy

The measurement of a successful program includes our ability to execute profitably, on time, without violations, and safely. Success can only be achieved when all four components are integrated; therefore, health and safety must be part of every operation, at every responsibility level. It is the intent of the AGVIQ-CH2M HILL Joint Venture (AGVIQ-CH2M HILL) to comply with established standards concerning the health and safety of our employees and create work environments that are free of recognized hazards that may result in an accident, injury or illness. To do this, we must be vigilant in the identification and elimination of acts and conditions that can produce or lead to accidents, injuries, and illnesses in our workplace.

Knowledge of an unsafe act or condition does not make the work “safe”. When an act or work area condition is identified that is not consistent with the established practices of the AGVIQ-CH2M HILL Health and Safety Program (HSP), it is the inherent responsibility of each employee to report such inconsistencies to a supervisor so the act or condition may be evaluated, corrected, controlled, or engineered to a status that does not pose a significant threat. Where an act or condition in the workplace is determined to be Immediately Dangerous to Life and Health of AGVIQ-CH2M HILL employees, work must stop until the condition has been abated.

Management, supervisory, and worker personnel are all entrusted with implementing the policies and procedures of the AGVIQ-CH2M HILL HSP and prepared site specific health and safety documents. Prevention of accidents, injury, and illness is an achievable objective for all employees, at all responsibility levels, for all program operations. It is a basic requirement that each manager and supervisor make the safety of employees under their tenure an integral component of his or her regular management practices. Additionally, it is the duty of each employee to accept and follow established safety policies and procedures established by AGVIQ-CH2M HILL.

No employee shall be required to work at a location that would jeopardize their life or health. Employee cooperation in detecting, controlling, and reporting workplace hazards is a condition of participation in the AGVIQ-CH2M HILL Joint Venture Program. It is critical for AGVIQ-CH2M HILL personnel to immediately inform their supervisor of any situation or work area condition that is beyond their ability to correct or control. AGVIQ-CH2M HILL personnel will not be disciplined or suffer any retaliation for reporting acts or conditions that are not consistent with the policies and procedures required by the AGVIQ-CH2M HILL HSP or project specific health and safety documents.

Every effort should be made to provide adequate training to our program participants; however, if an employee is ever in doubt about how to do a job or task safely, it is his or her duty to ask a qualified person for help. Fellow team members that need help should be assisted. Program participants are expected to assist management in accident prevention activities. Everyone is responsible for executing their assigned duties in a safe manner. Every incident (including a near-miss) that occurs in the workplace shall be reported to a first-line supervisor, as soon as possible. Under no circumstances, except in the instance of emergency medical care, should an employee leave the work site without reporting an

accident, injury, or illness that occurs in the workplace. When a workplace accident, injury, or illness occurs, everyone is affected. The success and longevity of our program is directly related to maintaining a healthy and safe working environment for everyone.

3.1 Objective

The objective of the AGVIQ-CH2M HILL Joint Venture Program is to provide a place of employment free of all recognized hazards that are causing or will likely to death or serious physical harm to our employees. This objective can be facilitated by developing and administering an overall health and safety program, which establishes written policies and procedures to serve as vehicles through which the program requirements will be implemented.

3.2 Purpose

The purpose of this project APP in conjunction with the project specific or program health and safety documents, is to define the policies, procedures, and requirements that must be implemented for the AGVIQ-CH2M HILL Joint Venture project and to establish the requirements, responsibilities and expectations for management, supervisors, employees, and subcontractors that may participate in the execution of the program projects. It is the intent of this APP to address applicable requirements set forth by 29 CFR 1910, 29 CFR 1926, EM 385 1-1, and AGVIQ-CH2M HILL policies and procedures incorporated by reference, herein.

3.3 Goals

The health and safety goal for this project and the overall goal for the AGVIQ-CH2M HILL program is to eliminate workplace accidents, gain worker acceptance through cooperation and training, and provide our clients with a responsible, well-trained, safety-oriented work force.

AGVIQ-CH2M HILL considers safety the highest priority during work at all project sites and its business offices and has established a goal of **zero incidents**. Projects will be conducted in a manner that minimizes the probability of near misses, injury, illness, and equipment/property damage.

4.0 Responsibilities and Lines of Authorities

The following listed AGVIQ-CH2M HILL personnel will have the authority to intervene and suspend work in the interest of ensuring adherence to Health and Safety policies and procedures defined by the APP and/or the AGVIQ-CH2M HILL Joint Venture Program.

AGVIQ-CH2M HILL Program Manager

Sidney Allison: (843) 242-8018/(843) 813-2672 (cell)

AGVIQ-CH2M HILL Deputy Program Manager

Michael Halil: (904) 777-4812/(904) 219-6277 (cell)

AGVIQ-CH2M HILL Project Manager (overall)

Amy Twitty: (850) 232-0320 (cell)

AGVIQ-CH2M HILL Project SSHO

Nicole Monroe: (504) 473-13394 (cell)

AGVIQ-CH2M HILL Site Supervisor

TBD

AGVIQ-CH2M HILL H&S Program CIH

Angelo Liberatore, CIH, CSP: (678) 530 4210/ (770) 335-2076 (cell)

AGVIQ-CH2M HILL H&S Program Administrator(s)

Josh Painter, CSP: (509) 380-4166 (cell)

4.1 Organization and Responsibility for Health and Safety

With AGVIQ-CH2M HILL, the safety and protection of employees, clients, and the community is the first priority. If an activity or condition at a location under control of AGVIQ-CH2M HILL is determined to be inconsistent with our health and safety policies and procedures, all efforts shall be made to correct the situation immediately or as soon as feasibly possible. At no time should any AGVIQ-CH2M HILL personnel perform or be allowed to perform duties in a work environment that is immediately dangerous to life and health (IDLH) or in an imminently dangerous situation. In these situations, the task will not proceed until the situation is corrected.

4.1.1 Program Manager

The AGVIQ-CH2M HILL Program Manager is the primary operational and safety official of AGVIQ-CH2M HILL and has overall responsibility for ensuring that AGVIQ-CH2M HILL program participants implement the established health and safety policies and procedures adopted by AGVIQ-CH2M HILL. The deputy program manager supports the execution of all operations required of the Program Manager.

4.1.2 Project Manager

The AGVIQ-CH2M HILL Project Manager is responsible for providing adequate resources (budget and staff) for project-specific implementation of the Health, Safety and

Environment (HS&E) management process. The Project Manager has overall management responsibility for the project tasks identified herein and reports to Program Management on all matters and to the Program CIH on matters involving the health and safety of program participants, project incidents or other health and safety related matters. The Project Manager may explicitly delegate specific tasks to other staff, but retains ultimate responsibility for completion of the following in accordance with this APP or other established health and safety requirements. Designated project coordinators, technical leads, engineers and other administrative staff support the execution of all operations required of the Project Manager. In general, the Project Manager's responsibilities include but are not limited to the following:

- Include standard terms and conditions, and contract-specific HS&E roles and responsibilities in contract and subcontract agreements (including flow-down requirements to lower-tier subcontractors).
- Select safe and competent subcontractors by:
 - Obtaining, reviewing, and accepting or rejecting subcontractor pre-qualification questionnaires.
 - Ensuring that acceptable certificates of insurance, including AGVIQ-CH2M HILL as named additional insured, are secured as a condition of subcontract award.
 - Including HS&E submittals checklist in subcontract agreements, and ensuring that appropriate site-specific safety procedures, training and medical monitoring records are reviewed and accepted prior to the start of subcontractor's field operations.
- Maintain copies of subcontracts and subcontractor certificates of insurance (including AGVIQ-CH2M HILL as named additional insured), bond, contractor's license, training and medical monitoring records, and site-specific safety procedures in the project file accessible to site personnel.
- Provide oversight of subcontractor HS&E practices per the site-specific safety plan.
- Manage the site and interface with third parties in a manner consistent with our contract and subcontract agreements and the applicable standard of reasonable care.
- Ensure that both the overall and job-specific HS&E goals are fully and consistently implemented.

4.1.3 Certified Industrial Hygienist

The AGVIQ-CH2M HILL Program CIH meets the established qualification, training and experience criteria requirements and exhibits sufficient knowledge in health, safety and/or industrial hygiene matters to manage and oversee the AGVIQ-CH2M HILL health and safety program. The CIH acts as the responsible program officer to review and approve all developed project specific APP's and provides consultation, recommendations or requirements with regard to project worker protection and exposure issues. The CIH may also be required to perform the project/program roles and responsibilities of the Health and Safety Program Administrator(s) (HSPAs), where required. The Program CIH responsibilities include, but are not limited to the following:

- Shall review and approve the project specific APP for field implementation.
- Also be available for consultation/direction with regard to project Industrial Hygiene and worker exposure matters, as may be required by the project team, SSHO or the AGVIQ-CH2M HILLHSPAs and review and approve any changes to the APP which alters established requirements for worker exposure or perimeter air monitoring or PPE.
- Perform the same roles and responsibilities as the HSPAs, where required.
- Meets the requirements of a “Health and Safety Manager”, where required.
- Coordinates with the Program Manager, Deputy Program Manager and the Project Manager (and the HSPAs or SSHO, as necessary) on all site or worker health and safety matters.

Note: On HS& E and Quality Control matters related to Munitions Response (MR) operations the Program CIH shall defer or consult with the MR Safety/Quality Control Officer.

4.1.4 Health and Safety Program Administrator(s)

The AGVIQ-CH2M HILL HSPAs administers the overall health and safety program for the AGVIQ-CH2M HILL program and reports directly to the Program Management and the Program CIH with regard to AGVIQ-CH2M HILL program or significant project matters. The HSPAs is responsible for supporting and assisting the AGVIQ-CH2M HILL program staff in executing the required health and safety policies and procedures adopted by the program, for implementation. The HSPAs responsibilities include, but are not limited to the following:

- Develop and/or review the project APP for final approval by the CIH.
- Provide review and comment on subcontractor pre-qualification questionnaires that fall outside the performance range delegated to the Contracts Administrator and request corrective actions are made, where required.
- Provide review and comment subcontractor training records and site-specific safety procedures prior to start of subcontractor’s field operations and request corrective actions are made, where required.
- Support the SSHO’s oversight of subcontractor (and lower-tier subcontractors) HS&E practices and interfaces with third parties, as necessary.
- Support and assist program staff in executing the HS&E policies and procedures adopted by the program for implementation, including the program Behavior Based Loss Prevention System (BBLPS) and overall Risk Management Process (RMP). Provide consultation and direction to project staff with regard to HS&E project and program requirements and industrial hygiene practices.

4.1.5 Site Supervisors

Site supervisors (inclusive of the worker category “Field Team Leaders”) are entrusted with special duties concerning the safety and health of employees. They are critical links to the success injury and illness prevention program and are key components to achieving assisting

with Loss Prevention goals. For this project, the site supervisor reports to the AGVIQ-CH2M HILL overall Project Manager on all project matters. Site supervisor responsibilities include but are not limited to the following:

- Providing adequate pre-project planning to allow for the effective procurement of appropriate equipment, materials, safety related systems or documents to facilitate the execution of individual project tasks in a safe and efficient manner;
- Coordinating the equipment and material needs to be procured by AGVIQ-CH2M HILL for the proper execution of the project.
- Promotes proper field communication and coordination with the overall project manager, field staff and client, as necessary, to personnel assigned to promote the proper execution of the project.
- Implementing the health and safety aspects of the AGVIQ-CH2M HILL program and ensuring that any on-site AGVIQ-CH2M HILL personnel adhere to the requirements of this APP, host facility conditions or other applicably health and safety requirements relayed to project personnel as part of the execution of this project;
- Conveying hazard information, to which they are advised of, to subordinate employees at the contract project site or facility locations;
- Investigating AGVIQ-CH2M HILL accidents, injuries and illness, that occur under their supervision at the contract project site, in accordance with the accident investigation procedures identified for the program;
- Implementing the components of the AGVIQ-CH2M HILL BBLPS including the execution of routine pre-job safety overviews at AGVIQ-CH2M HILL contract project locations as the project begins, as new tasks are planned, as new project hazards are identified or when new project team members are assigned to the project site;
- Taking prompt action to correct identified acts or conditions which are personally observed by a supervisor or brought to the attention of a supervisor that are not consistent with the conditions of this APP or AGVIQ-CH2M HILL health and safety program requirements ;
- Promoting and ensuring an appropriate project safety culture for subordinate site personnel by positive example; and
- Stopping or correcting questionable acts or identified conditions that are under a supervisor's responsibility and which are inconsistent with established safety standards, AGVIQ-CH2M HILL policies and procedures and requirements established by Site APP.

4.1.6 Site Safety and Health Officer

The SSHO is responsible for verifying that the project is conducted in a safe and healthy manner and includes the following specific obligations:

- Verify this APP remains current and amended when project activities or conditions change.

- Coordinates with the Site Supervisor and the Project Manager (overall) on all site matters and reports to the Program CIH (or HSPAs as an alternate) on all health and safety matters.
- Verify AGVIQ-CH2M HILL site personnel and subcontractor personnel read, or have been briefed on the contents of this APP, and sign Attachment 1, APP “Acknowledgement Form” prior to commencing field activities.
- Verify AGVIQ-CH2M HILL site personnel and subcontractor personnel have completed any required specialty training (e.g., fall protection, confined space entry) and medical surveillance as identified in Section 6, and maintain the Subcontractor H&S Tracking Form, where applicable (Attachment 2).
- Verify adherence with the requirements of this APP and applicable the subcontractor’s health and safety plan(s).
- Act as the project “Hazard Communication Coordinator”.
- Act as the project “Emergency Coordinator” and perform the responsibilities outlined in this APP or as maybe required to properly coordinate the on-site response of emergencies, as they arise.
- Verify that safety meetings are conducted at least daily or more frequently as project tasks or hazards change and documented for the project record in accordance with the requirements of the BBLPS.
- Verify that project H&S forms and permits, found in Attachment 3, are being used as intended.
- Verify that Project Activity Self-Assessment Checklists, found in the CH2M HILL, Inc. Standard Operating procedures (SOPs) referenced in this APP, are being used as intended.
- Implement the Drug-Free Workplace Program.
- Verify that project files available to site personnel include copies of executed subcontracts and subcontractor certificates of insurance (including named additional insured), bond, contractor’s license, training and medical monitoring records, and site-specific safety procedures prior to start of subcontractor’s field operations.
- Manage interface with third parties in a manner consistent with our contract/ subcontract agreements and the applicable standard of reasonable care.
- Coordinate with the HSPAs or Program CIH regarding AGVIQ-CH2M HILL and subcontractor operational performance, and third-party interfaces.
- Ensure that the overall, job-specific, HS&E goals are fully and continuously implemented.

The SSHO is responsible for coordinating with the AGVIQ-CH2M HILL individual responsible for site operations (i.e., Site Supervisor/Manager or Field Team Leader) and Project Manager, as necessary. In general, the Project Manager will contact the client in the

event accidents, injuries or property damage occurs on the project site. The Program CIH or HSPAs, as necessary, should be contacted by the SSHO as appropriate.

4.1.7 AGVIQ-CH2M HILL Program Participants

All AGVIQ-CH2M HILL Program participants (i.e. “employees”), regardless of job title, share the responsibility for executing their assigned tasks in a healthy and safe manner and must report any or acts or conditions that are not consistent with established health and safety procedures and protocols at the project site without fear of reprisal. It is imperative that AGVIQ-CH2M HILL Program participants observe the following minimum requirements in order to achieve a safe and healthy workplace:

- Each employee must familiarize themselves with the contents this APP and the general safety rules herein.
- Each employee will practice procedures and follow all safety rules and regulations for the successful completion of any job task.
- All employees will wear the necessary PPE required for the job or task as specified by the APP or other applicable program requirements.
- The employee will notify their immediate supervisor of any potential workplace hazard or work practice that is not consistent with the AGVIQ-CH2M HILL health and safety policies and procedures and could result in an accident, injury, illness, environmental releases or destruction of property.
- The employee will report all accidents to an immediate supervisor regardless of whether injury or property damage resulted. This includes all near misses (accidents without injury or damage). This requirement serves to bring unsafe conditions to the attention of management.
- Each employee will be subject to contraband search for safety purposes and for the safety of fellow employees.
- Violations of published safety policies and procedures may be cause for disciplinary actions up to and including dismissal.
- Each employee this is taking any prescription or over the counter medications that could alter the manner in which they could be treated in an emergency or effect their job performance/safety of the employee or other employees in the work environments (i.e. via heavy equipment operations) shall notify their supervisor prior to beginning work.

4.2 Employee Competency

Employee competency, as defined by 29 CFR 1926.32(f) and for areas of executable contract work for which an employee has responsibility, shall be established by the appropriate employer only (i.e. AGVIQ, LLC or CH2M HILL, Inc.). Employee competency is determined by employee training, total work experience and/or on the job training, professional certification and/or educational degrees.

It is the opinion of AGVIQ-CH2M HILL that the professionals identified in this APP are competent in their areas of expertise with regard to the management, field execution of the

specified contract work, or in the implementation of AGVIQ-CH2M HILL site specific or program health and safety requirements, as applicable.

Executable onsite contract work for which there is a specific requirement for a competent person to oversee (i.e. excavation, scaffolding etc.), will not be conducted unless a competent person is available onsite.

In addition to the above, the AGVIQ-CH2M HILL Health and Safety Program utilizes a team of Health and Safety Professionals who qualified by experience, training, educational degrees and professional certification (CIH, CSP, CHST, ASP) to act as the responsible program officers with regard to the overall project specific and program wide implementation of the AGVIQ-CH2M HILL Health and Safety policies and procedures.

4.3 Requirements for Pretask Safety and Health Analysis

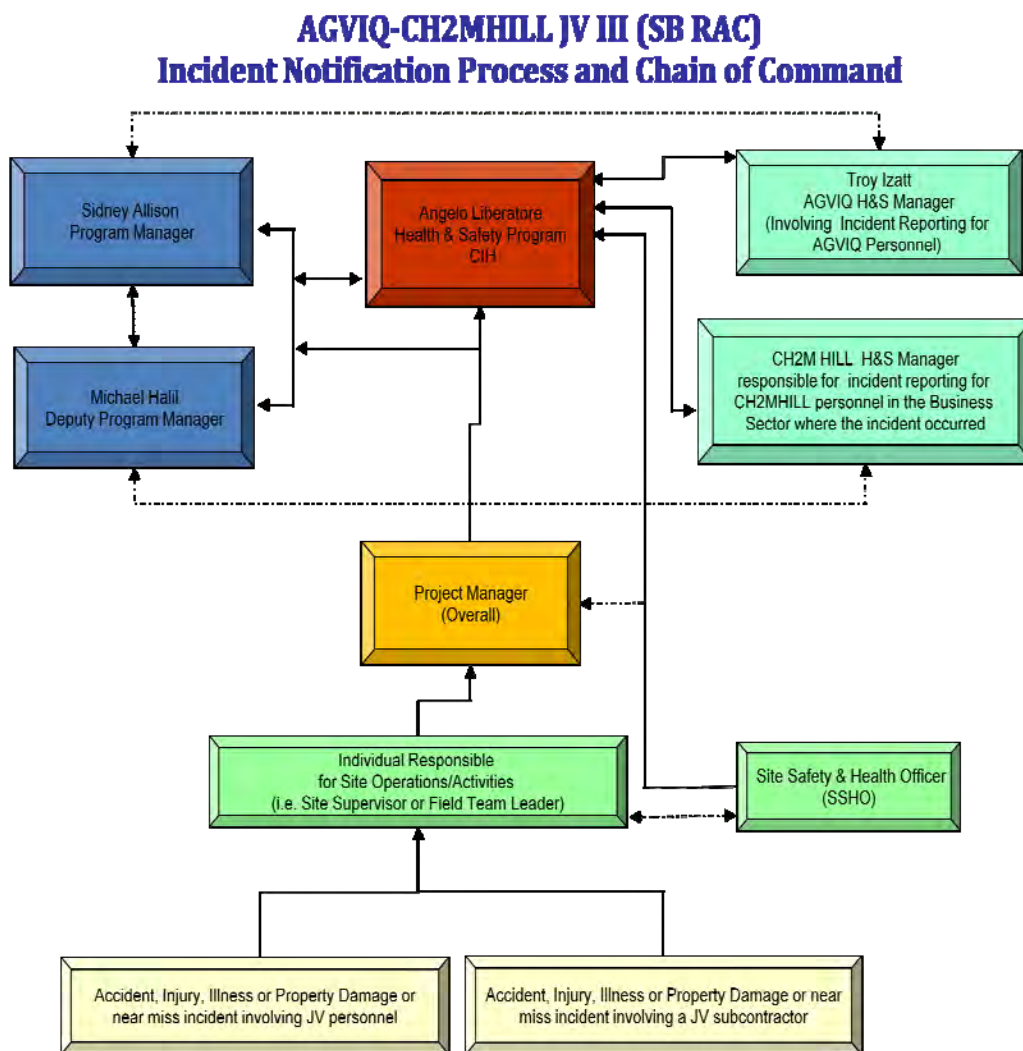
Requirements for completing Pre-Task Safety and Health Analysis prior to the execution of on-site work must be, at a minimum, in accordance with **Section 10** of this APP. Activity Hazard Analysis (AHA) documents applicable to this project are included in **Section 10.6** this APP.

The AGVIQ-CH2M HILL SSHO or site supervisor/FTL will conduct daily safety meetings at the start of each work shift for on-site personnel and periodic “work phase” meetings (i.e. AHAs) in accordance with **Section 10 of this APP**. The SSHO, site supervisor/FTL or must require subcontractors to follow similar meeting procedures or participate in the AGVIQ-CH2M HILL daily safety meetings or work phase meetings, as necessary. It is expected that for the execution of this particular contract, conducting joint AGVIQ-CH2M HILL and subcontractor daily safety and work phase meeting will be integral to the proper implementation of established general and specific health and safety procedures.

4.4 Primary Lines of Authority

Safety responsibilities, accountability, and lines of authority for this project are as identified in **Sections 4.1 through 4.6** of this APP and is as graphically represented in Figure 4-1, below.

FIGURE 4-1



4.5 Non Compliance with Requirements

The duty for employee disciplinary action must be exercised by the employee's company line manager, supervisor, or corporate official only, as appropriate. Verbal or written reprimands, suspensions, or terminations shall be in accordance with the requirements established by the AGVIQ, LLC or CH2M HILL, Inc. employee's Corporate Employee Handbook, or internal policies and procedures and SOPs. The content of these documents applies to employees of the specific employer and its authorized subsidiaries.

To ensure seamless project operations and the best possible work environment for AGVIQ-CH2M HILL personnel, both AGVIQ, LLC and CH2M HILL, Inc. in its business partnership (AGVIQ-CH2M HILL Joint Venture), expects its employees to follow rules of conduct that and established site procedures that will protect the health and safety of all AGVIQ-CH2M HILL personnel.

Where unacceptable employee behavior or workplace actions are identified, it is will be the intent of the employer to administer equitable and consistent disciplinary actions. It is in the best interest of AGVIQ, LLC and CH2M HILL, Inc. to ensure fair treatment of all employees by making certain that disciplinary actions are prompt, uniform, and impartial. The major purpose of any disciplinary action is to correct the problem, prevent recurrence, and prepare the employee for satisfactory service in the future.

Employee disciplinary actions are "typically" exercised in a three (3) steps process;

- verbal warning,
- written warning,
- suspension with or without pay or up to termination of employment, depending on the severity of the problem and re-occurrences of similar unacceptable employee behavior or workplace actions.

Both AGVIQ, LLC and CH2M HILL, Inc. recognize that there are certain types of employee problems that are serious enough to justify either a suspension, or, in extreme situations, termination of employment, without going through the usual progressive discipline steps, but this decision shall be solely determined by the employee's respective employer and not the AGVIQ-CH2M HILL Joint Venture.

By using progressive discipline, most employee problems can be corrected at an early stage, benefiting both the employee, AGVIQ, LLC, CH2M HILL, Inc. and the AGVIQ-CH2M HILL Joint Venture Program.

4.6 Managers and Supervisors Safety Accountability

It is the duty of the first line supervisor to motivate employees to adhere to AGVIQ-CH2M HILL's safety policy and procedures and established hazard control measures for each work environment. A first line supervisor, for these purposes, is defined as that person designated to give immediate onsite supervision to personnel involved in a task.

All manager and supervisors must endeavor to implement complete established health and safety policies, procedure for and hazard control measures for all projects and tasks under their supervision. When in doubt, they should seek the assistance of the Program

CIH/HSPAs, or other authorized program safety professional, prior to initiating a task. This is the only acceptable manner in which to perform the task. If the task cannot be accomplished in a manner that is consistent with established program, regulatory or contract health and safety requirements, it will not be attempted.

Managers and supervisors will:

- Explain the safety procedure involved with a task to each employee and check frequently to see that the employee understands and works as instructed.
- Allocate sufficient time for the training and coaching of all employees to ensure that everyone knows the correct procedure for safely accomplishing required tasks.
- Prevent new employees from performing any tasks until required training is completed.
- Immediately correct unsafe conditions that involve AGVIQ-CH2M HILL employees or contractors.
- Ensure that the employees are outfitted with and wear PPE as specified by this APP other AGVIQ-CH2M HILL procedures, or as directed by the Program CIH, HSPAs, Project Manager, or SSHO.
- Set a good safety example.
- Obtain the cooperation of employees and contractors.
- Provide a safe work environment for employees and contractors.
- Confirm contractor safety performance records have been verified prior to contract award and monitor contractor performance during operations.
- Report all accidents, near misses, and property damage in accordance with the Incident Management and Reporting Procedure.
- Establish a safety culture, using the elements of the AGVIQ-CH2M HILL Safety Improvement process, which promotes awareness, encourages participation, and recognizes excellence.

5.0 Subcontractors and Suppliers

5.1 Subcontractor/Supplier Coordination and Control

AGVIQ-CH2M HILL subcontractor safety performance and adherence to established industry standards and project policies and procedures will be reviewed prior to being issued a contract for Site work. AGVIQ-CH2M HILL subcontractors must be required to comply with the most stringent requirement defined by the Subcontractor's own policies and procedures, or requirements outlined in this APP, regulations or other requirements applicable to a project, such as contract flow-down requirements.

All subcontractors who may be required to execute this contract may not be identified at the time that health and safety documents are prepared for submission or implementation. Because of the potentially dynamic and evolving nature of contract requirements and resultant project scheduling at many points during the project evolution, only partial identification of potential subcontractors who may be selected for our project is likely. To this end, continuously updating and amending this APP with potentially selected, newly selected subcontractors would not be practical or cost effective for all parties concerned.

The AGVIQ-CH2M HILL procurement/contracting team maintains an extensive and detailed process for subcontractor procurement with the Federal Acquisition Regulations (FAR) as the primary driver. Subcontractor selection is based on scope of work pricing, qualifications, current and historical safety performance data and best value evaluations.

5.2 Subcontractor/Supplier Responsibilities

All subcontractor personnel actively engaged in on-site operations will be required to sign in daily at AGVIQ-CH2M HILL controlled project sites (see **Attachment 3** of the APP) and either attend an AGVIQ-CH2M HILL sponsored daily safety meeting and work phase meeting (or be required to conduct their own) which addresses daily operations, site specific hazard awareness, or other pertinent issues associated with the scheduled work or complete their own meeting of similar intent.

The details of the each daily or work phase meeting will be documented prior to the start of work at the daily site operations. At the discretion of the AGVIQ-CH2M HILL Site supervisor, this function may be completed by the SSHO to facilitate the requirement. However, where AGVIQ-CH2M HILL and subcontractor personnel are engaged in integral site operations, it is recommended that joint meetings are conducted. In addition, Subcontractors must develop and provide AHAs for their work activities to AGVIQ-CH2M HILL for review, which depending upon contract conditions, may also be required to be forward to project Owner for review as well.

Typically, the subcontractor reports directly to the AGVIQ-CH2M HILL Project Manager. The AGVIQ-CH2M HILL Project Manager may designate subcontractor reporting requirements to the AGVIQ-CH2M HILL site supervisor (i.e. Superintendent, foreperson, Field Team Leader or other appropriate designee).

All incidents involving subcontractor personnel must be reported to the AGVIQ-CH2M HILL site supervisor and a copy of the subcontractor's incident or injury/illness report will be submitted to the AGVIQ-CH2M HILL site supervisor, Project Manager, program Manager and Program CIH as soon as possible, but no later than 24 hours.

AGVIQ-CH2M HILL subcontractors may be required to acknowledge and adhere to the requirements of the AGVIQ-CH2M HILL APP. Subcontractors covered by this APP must be provided a copy of it to read and accept prior to initiating work on this Site or be provided a briefing of its contents. However, if the AGVIQ-CH2M HILL APP does not address specific hazards associated with specialty tasks and equipment that the subcontractor has expertise in (e.g., electrical, scaffold erection, demolition), a subcontractor must be required to develop or implement their own APP which is equally or more stringent than AGVIQ-CH2M HILL APP or prime contract documents.

Subcontractors are responsible for the health and safety procedures specific to the work, but it is critical that subcontractor work be performed in a manner that is consistent with applicable Occupational Safety and Health Administration (OSHA) standards (29CFR1910, 29CFR1926, as applicable), EM 385 1-1 or other applicable health and safety plan(s)/protocols. Identified subcontractor health and safety performance or site conditions that are not consistent with established procedures must be corrected.

Subcontractor personnel must not be allowed to ride on tractors, forklifts, or similar vehicles unless specific seats are provided. They must follow project hot work rules if hot work is required for vehicle or equipment maintenance. Subcontractor haul trucks must be loaded and unloaded in a safe and effective manner and materials must be stored safely in designated locations only. Associated packaging will be properly disposed and litter will not be permitted to be scattered or blown from truck beds. Operators of mobile on-site equipment must observe all traffic rules such as speed limits and pedestrian rights-of-way.

AGVIQ-CH2M HILL continuously endeavors to observe a subcontractors' safety performance. This process should be reasonable and include observing site hazards, practices and procedures that are not consistent with established HS& E requirements that are both readily observable and occur in common work areas. AGVIQ-CH2M HILL oversight does not relieve subcontractors of their responsibility for effective implementation and compliance with the established plan(s), protocols, or established safety regulations or contract conditions.

In addition to this level of observation, the site supervisor or SSHO should confirm AGVIQ-CH2M HILL subcontractor performance against both the subcontractor's safety plan and standard industry procedures or contractual requirements.

Health and safety related communications with AGVIQ-CH2M HILL subcontractors should be conducted as follows:

- Request subcontractor personnel to read this APP and then require them to sign the APP Acknowledgement Form included in Attachment 1 of this APP, as applicable.
- Request subcontractor(s) to brief the project team on the hazards and precautions related to their work.

- Verify that applicable subcontractor employee training documents, as applicable, are valid.
- When apparent conditions, actions, or practices are observed that are not consistent with this APP, AGVIQ-CH2M HILL Health and Safety Program protocols or project/regulatory requirements, notify the subcontractor safety representative and require corrective action – the subcontractor is responsible for determining and implementing necessary controls and corrective actions.
- When identified conditions or practices/actions that are not consistent with AGVIQ-CH2M HILL health and safety policies and procedures, or other applicable Health and Safety protocols or project/regulatory requirements, are repeated or persist, notify the subcontractor safety representative, individual responsible for site operations and/or Project Manager and stop affected work until adequate corrective measures are implemented. See Stop Work Order (SWO) Form in Attachment 3 of the APP.
- When an apparent imminent danger exists, immediately remove all affected AGVIQ-CH2M HILL employees and subcontractors, notify subcontractor safety representative, individual responsible for site operations and/or Project Manager and stop affected work until adequate corrective measures are implemented (see SWO form). Notify the Project Manager (overall) and Program CIH (or HSPAs if necessary), as appropriate.
- Document all oral health and safety related communications in project field logbook, daily reports, or other records.
- All subcontractor employees are subject to the same training (or medical surveillance requirement, where applicable) as AGVIQ-CH2M HILL personnel, depending on job activity and OSHA requirements.

6.0 Training

6.1 New Hire SOH Orientation Training

The overall Safety and Occupational Health (SOH) orientation of all an individual's training provided by the employer, professional experience achieved by the individual and requirements necessary to acquire certain personnel certifications for job assignments and/or professional development.

Because the AGVIQ-CH2M HILL Joint Venture is composed of two separate and distinct corporations operating together in a business partner arrangement, both corporations separately conduct new hire safety and occupational health (SOH) orientation training in accordance with each employers (AGVIQ, LLC or CH2M HILL) established processes. Typically such orientations would be performed by an employee's line supervisor, human resource representative, intranet training or by employee review of information provided by the employer. In general, new hire SOH orientation training would most likely include the following components, depending on the employee's hire category.

- 1) Completion of hire evaluation new any employer specific Drug Free Work Place (DFWP) requirements
- 2) Introduction to company/corporate history
- 3) Organizational Structure
- 4) Briefing on job functions and employee performance expectations
- 5) Time keeping and/or expense reporting
- 6) Provision, review and acknowledgement of Corporate Policies and Procedures Manual (aka Employee Manual) or equivalent
- 7) Provision, review and acknowledgement of Corporate Health and Safety Program Plan or equivalent
- 8) Verification and update (as necessary) of prerequisite training and medical surveillance testing, where applicable for field work (HAZWOPER/Construction)
- 9) Management and Supervisor training, as applicable

In order to promote the seamless operation of the AGVIQ-CH2M HILL Joint Venture program as a single entity, orientation to management and supervisory personnel who have not previously participated in the AGVIQ-CH2M HILL programs is provided. This orientation typically would include, but not be limited to the following:

- 1) Background history of the development and functionality of the AGVIQ-CH2M HILL Joint Venture Programs
- 2) Organizational Structure
- 3) Project and Program reporting requirements (incident, financial and chain of command)
- 4) Fund allocation, cost tracking, forecasting and invoicing procedures
- 5) Review processes for Client Request For Proposal (RFP) responses and project deliverables
- 6) Project concurrence or changed conditioned processes

- 7) Expectations with regard to Client/Customer and project team communications, project performance, Client/Customer expectations, health and safety and quality control performance
- 8) Resource allocation

All designated AGVIQ-CH2M HILL personnel, regardless of assignment responsibilities, who are engaged in site operations must review or be provided a detailed briefing on the contents of site specific health and plans, APP's, task specific Activity Hazard Analyses (AHAs) and daily safety briefings and must acknowledge such documents by signature.

6.2 Requirements for Mandatory Training and Certificates

AGVIQ-CH2M HILL engages in construction, environmental remediation and other consulting services and endeavors to comply with the health and safety training requirements mandated by governmental agencies, internal policies and client requirements.

Personnel will be provided sufficient training to execute their jobs in a safe and healthy manner. It is the responsibility of each employer (AGVIQ, LLC and CH2M HILL, Inc.) to ensure that their employees maintain the appropriate training requirements to complete their assigned duties.

Direct supervisors, with support by the Senior Management and Health and Safety professionals, are responsible for determining the training requirements for a specific project or task and ensure that personnel assigned to AGVIQ-CH2M HILL operations have the necessary training to complete the project/task safely. Senior management and the Program CIH or HSPAs (or outside vendors) will assure with the delivery of identified required training.

Designated employer personnel and electronic databases facilitate the maintenance of training records and applicable experience documentation. When an employee training is identified being insufficient to perform an assigned task, every effort will be made to provide the necessary training or to provide a trained and experienced alternate until the employee has achieved the required criteria.

Employee training records are available at corporate offices, by electronic means, and generally maintained on the project site. Depending on the size of the project crew and because of work crew dynamics and scheduling, the provision of hard copy employee training records (and medical surveillance records where applicable) for all anticipated personnel who may be assigned to this project, within the content of this APP is impractical. AGVIQ-CH2M HILL endeavors to maintain these documents on-site for review and will provide them to government officials for verification, upon request.

All AGVIQ-CH2M HILL personnel performing Hazardous Waste Operations and Emergency Response (HAZWOPER) Regulated Tasks are enrolled in a comprehensive health and safety program, which at a minimum, meets the requirements of 29CFR1910.120/29CFR1926.65 or 29CFR1910.134. The medical surveillance and training requirements associated with this project are summarized below.

Training or Medical Surveillance Requirement	Applicability
<ul style="list-style-type: none"> 29CFR1910.120(e)(3)/29CFR1926.65(e)(3) Note: 40 hr or 24 training as applicable to employee assigned duties. No periodic refresher performance as long as the requirements of 29CFR1910.120(e)(8)/29CFR1926.65(e)(8) are maintained. 	<ul style="list-style-type: none"> All site personnel performing HAZWOPER regulated activities identified in section 2.4 of this APP.
<ul style="list-style-type: none"> 29CFR1910.120(e)(8)/29CFR1926.65(e)(8) on an annual basis 	<ul style="list-style-type: none"> All site personnel performing HAZWOPER regulated activities identified in section 2.4 of this APP.
<ul style="list-style-type: none"> 29CFR1910.120(e)(4)/29CFR1926.65(e)(4) with no specific recertification requirements. 	<ul style="list-style-type: none"> All site manager, supervisory or SSHO personnel performing HAZWOPER regulated activities identified in section 2.4 of this APP.
<ul style="list-style-type: none"> First Aid/CPR 1st Aid – typically 3 yr renewal CPR – 1 or 2 yr renewal (depending on sponsor) 	<ul style="list-style-type: none"> All designated manager, supervisory or SSHO site personnel (2 per site).
<ul style="list-style-type: none"> 29CFR1910.120(f)/29CFR1926.65(f) on an annual basis under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine 	<ul style="list-style-type: none"> All site personnel performing HAZWOPER regulated activities identified in section 2.4 of this APP.
<ul style="list-style-type: none"> 29CFR1910.134(e) on an annual basis under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine 	<ul style="list-style-type: none"> All site personnel performing HAZWOPER regulated activities identified in section 2.4 of this APP and required to utilize respiratory protection
<ul style="list-style-type: none"> OSHA 10 hour Construction Safety Training (or equivalent) 	<ul style="list-style-type: none"> SSHO Site Supervisor
<ul style="list-style-type: none"> 49CFR172.700 renewal, every 3 years 	<ul style="list-style-type: none"> Each person who offers for transportation in commerce or transports in commerce hazardous materials

- Initial training required by 29CFR1910.120(e)(3)/29CFR1926.65(e)(3) shall be 40-hour or 24-hour training initial training, and 3-day/1 day on-the-job experience in accordance with employee's normal assigned duties and anticipated site conditions as applicable to the requirements of CFR1910.120(e)(3)(i)-(iv)/29CFR1926.65(e)(3) (i)-(iv). Site personnel performing operations falling under the requirements of 29CFR1910.120/29CFR1926.65 shall also have 8 hours of "refresher training" on an annual basis, in accordance with 29CFR1910.120(e)(8)/29CFR1926.65(e)(8).
- Onsite management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations and individuals designated as an SSHO shall also have an additional 8 hours of "management and supervisor" training defined by 29CFR1910.120(e)(4)/29CFR1926.65(e)(4).
- It is our intent to require site personnel designated with management, site supervisor, or SSHO responsibilities to maintain current American Red Cross or American Heart Association sponsored First Aid and Cardiopulmonary Resuscitation (FA-CPR) certifications. When a medical facility or physician is not accessible within 5 minutes of an injury to a group of two or more employees for treatment of injuries, at least two employees on each shift shall be trained to administer First Aid and CPR. These individuals have also been provided training in exercising universal precautions against exposure to blood borne pathogens as a component to FA/CPR training which meets the intent of 29CFR1910.1030. This employee training is also regularly complemented by other regularly scheduled employer training curriculums that are

typically executed for the HAZWOPER industry, regulated under 29CFR1910.120/29CFR1926.26.

- All employees who perform work at hazardous waste sites or perform emergency response operations meeting the criteria of 29CFR1910.120(a)(1)(i)-(v)/29CFR1926.65(a)(1)(i)-(v) standards will be subject to the individual employer medical surveillance program requirements. AGVIQ, LLC and CH2M HILL, Inc. medical surveillance programs conform to the requirements established by 29 CFR 1910.120(f)/1926.65 (f) and/or 29CFR1910.134 (e).
- In addition, each AGVIQ-CH2M HILL project site manager or supervisor with SSHO responsibilities or construction oversight responsibilities on construction related projects shall have received an OSHA 10-hour Outreach Construction Safety training course (OSHA 10hr), or equivalent (i.e. CH2M HILL Site Safety Coordinator (SSC) training.
- Certain key project site personnel that may be responsible for packaging, labeling hazardous materials for transportation will have received training in accordance with 49 CFR 172.700
- Employees being exposed to certain air borne chemicals or contaminants may require medical monitoring requirements defined by OSHA standards but outside of the medical monitoring requirements defined by 29CFR1910.120 (f) or 29CFR1910.134 (e), as applicable to anticipated site conditions.
- Employees performing certain assigned tasks (confined-space entry, scaffold, etc.) will involve additional training and will be completed as task conditions warrant.

6.3 Procedures for Periodic Safety & Health Training of Supervisors and Employees

Supervisor and employee training is established as a routine training provided by the employee's employer (AGVIQ, LLC or CH2M HILL, Inc.) as method of adhering to OSHA, Department of Transportation (DOT) or other which is required to be provide by an employer to an employee. The types and frequency of routine training provided to AGVIQ-CH2M HILL program participants by AGVIQ, LLC or CH2M HILL, Inc. is identified in section 6.2 of this APP.

Additional supervisor and employee training is supplemented by the implementation of our the RMP implemented by AGVIQ-CH2M HILL), which is detailed in section 10.0 of this APP. Execution of the AGVIQ-CH2M HILL RMP provides a means and method to achieve overall project "goals" established by the project/program. Implementation of AHAs and daily safety meetings as part of the RMP provides a method for routine supervisor and employee "awareness training". The desired result of the implementation of the RMP is to facilitate the identification and control of certain risks (or liabilities) that may be encountered during the execution of the project. Additionally, the implementation of our RMP processes establishes and maintains a level of expectation with regard to overall project and program health and safety performance.

6.4 Requirements for Emergency Response Training

There are no specific requirements for emergency response training for this project other than the following:

- 29 CFR 1910.120(e)(3)/29CFR1926.65(e)(3) standard
- On the job experience associated with operations regulated by 29 CFR 1910.120(e)(3)/29CFR1926.65(e)(3) standard
- First Aid and CPR training and Blood Borne pathogen training

Note: Confined Space Entry (CSE) rescue training under 29CFR1910.146 (k)(2)(iii-iv) for CSE operations is not applicable to this project.

7.0 Safety and Health Inspections

The AGVIQ-CH2M HILL site supervisor/FTL or SSHO are required to perform site inspections using the checklists/forms included herein **Attachment 3** of this APP. The forms included in **Attachment 3** herein are not intended to be an all inclusive detail of inspection forms/checklists which may be needed during the execution of this project, but are intended to represent a submittal basis only. Other applicable forms or checklists contained in CH2M HILL SOP are referenced in section 9.0 of this APP, and are available in electronic format for AGVIQ-CH2M HILL program participants.

Site inspections/evaluations will be made by the site supervisor/FTL, SSHO or other designated AGVIQ-CH2M HILL representative, depending on assigned job function. Discrepancies or HS&E inconsistencies identified during inspection and evaluation process will be corrected as soon as practicable and documented on the Loss Prevention Observation (LPO) form and/or Deficiency Tracking System form included in **Attachment 8** of this APP. Serious inconsistencies that represent potential immediate harm or danger to an employee will be corrected immediately or controlled to a condition where it does not represent a threat to the employee. Inspections that identify Imminent Danger or IDLH situations will require that work be immediately stopped and personnel removed from the work area until the situation is abated, corrected, or controlled to a non-hazardous condition.

The site supervisor or SSHO (when designated by the Project Manager or site supervisor) is responsible for conducting and preparing reports of inspections of work processes, site conditions and maintaining these documents for the project record, as necessary. Heavy equipment operators who are assigned to operate on-site heavy equipment are responsible inspecting their assigned equipment on a daily basis. Corrective actions resulting from discrepancies identified during inspections will be reviewed with the Project Manager and implemented, as necessary. Copies of these reports are maintained on file at the project locations.

A member of AGVIQ-CH2M HILL senior management or their designated representative may periodically conduct site visits and perform additional assessments of project health and safety performance, at their own discretion or at the request of a corporate official employee, site supervisor or manager. Any discrepancies identified as part of these inspection processes will be addressed with the Project Manager by the senior management team and may be corrected in the field if minor in nature.

The following is a typical list of the type and frequency of inspections that may be associated with this project and what individuals should perform such inspections.

Inspection Type	Designated Person	Frequency
Heavy Equipment	Designated Heavy Equipment Operator	Daily when operated
Loss Prevention Observation	Any site personnel, but typically the Site supervisor/FTL , SSHO or QCM	Weekly
Deficiency Tracking Log (includes general site inspection)	Any site personnel, but typically the Site supervisor/FTL , SSHO or QCM	Entered Daily
Fire Extinguishers	Any site personnel, but typically the Site supervisor/FTL , SSHO or QCM	Once Monthly Once Annually
Project Audits	Program level: managers, health and safety professionals or quality control managers	Typically once per project but is dependent upon project complexity and size
First Aid Kits	Any site personnel, but typically the Site supervisor/FTL , SSHO or QCM	Before on-site use and at least every 3 months or more frequently depending on use
Hand and Power Tools	Individual using tool	Before Use
Electric Cords and GFCI's	Individual using electric cord and GFCI	Before Use

7.1 External Inspections/Certifications

The following is a list of potential external inspections that may be or will be required by NAVFAC.

- Issuance of public locates permit #/clearance report
- NAVFAC Excavation Permit

8.0 Accident Reporting and Investigation

8.1 Exposure Data (man-hours worked)

Because the AGVIQ-CH2M HILL Joint Venture is composed of two separate and distinct corporations operating together in a business partner arrangement, both corporations separately record and report information related to annual labor hours and workplace injuries and illnesses as required by 29 CFR 1904. Where annual summary postings are required under 29 CFR 1904.32(b) (6), they will be posted as separate documents by AGVIQ, LLC, and by CH2M HILL, Inc., in our appropriate workplace environment(s). In addition, because AGVIQ-CH2M HILL operates as a business partnership and not as a single business entity, AGVIQ-CH2M HILL does not maintain a jointly established Experience Modification Rate.

However, designated employee representatives from the AGVIQ-CH2M HILL Joint Venture programs tabulate and track labor hours posted to the AGVIQ-CH2M HILL program and lost work day and recordable incident information attributable to the execution of all AGVIQ-CH2M HILL Joint Venture program contracts and issued contract task orders. This process is executed for the purpose of establishing a safety performance history associated for our business partnership. AGVIQ-CH2M HILL safety performance data is extrapolated from the following:

- Tabulated Employer Labor Hours
- Established Incident Reporting Processes
- Incident Investigation Reports
- Formal Project Audits

To date, the AGVIQ-CH2M HILL Joint Venture programs has expended over 920,000 labor hours since 2003. Last year the Joint Venture worked 11,444 hours with no OSHA recordable cases, and zero (0) fatalities. With this information available the following can be determined:

Days Away, Restriction, or Job Transfer (DART) Incident Rate:

$$\frac{\text{Number of DART Cases} \times 200,000}{\text{Number of Hours Worked}}$$

$$\text{DART Incident Rate} = \frac{0 \times 200,000}{11,444} = 0.00 \quad \text{AND}$$

OSHA Recordable Incident Rate:

$$\frac{\text{Number of OSHA Total Recordable Cases} \times 200,000}{\text{Number of Hours Worked}}$$

$$\text{OSHA Total Recordable Case Rate} = \frac{0 \times 200,000}{11,444} = 0.00$$

No DART cases or other recordable cases have been experienced for AGVIQ, LLC or CH2M HILL, Inc. employees participating in the AGVIQ-CH2M HILL Joint Venture since 2010.

For the Construction (North American Industry Classification System [NAICS] code -23) and Remediation Services (NAICS code - 56291) industries, which is typical of the contract work that AGVIQ-CH2M HILL typically executes, the AGVIQ-CH2M HILL calculated DART and OSHA Recordable Incident Rates for our entire operating period, are currently well below DART Incident Rate (IR) and OSHA Recordable Incident Rate tabulated by the 2008 United States Bureau of Labor Statistics (USBLS) for these industries (see below).

- | | |
|--|-------------------|
| • USBLS IR Construction Benchmark (2008): | 4.7 |
| • USBLS DART Construction Benchmark (2008): | 2.51 ¹ |
| • USBLS IR Remediation Services Benchmark (2008): | 3.1 |
| • USBLS DART Remediation Services (NAICS Code 56291) Benchmark (2008): | 1.91 ¹ |

¹ DART total “all sizes”

8.2 Accident Investigations, Reports and Logs

Completion of incident and near-miss incident investigation reports for the AGVIQ-CH2M HILL Joint Venture shall be performed using the forms in **Attachment 9** of this APP and generally via the procedures identified herein. The AGVIQ-CH2M HILL Program CIH, HSPAs, or their designee (SSHO, site supervisor, project manager), conducts accident/incident investigations and prepares the required incident or near-miss incident investigation reports for the following conditions:

- Near Miss Incidents
- DART or other OSHA recordable cases
- Spills, releases, discharges, or environmental violations
- Property damage incidents resulting in over \$1,000 of loss
- A fatal injury *
- A hospitalization of three or more people resulting from a single occurrence *
- A weight-handling equipment incident
- A permanent total disability
- A permanent partial disability

* Within eight (8) hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident, you must orally report the fatality/multiple hospitalization by telephone or in person to the Area Office of the OSHA, U.S. Department of Labor, that is nearest to the site of the incident. You may also use the OSHA toll-free central telephone number, 1-800-321-OSHA (1-800-321-6742).

Completed incident and near miss incident investigation reports are to be reviewed by the CIH/HSPAs, Project Manager (overall), site management (SSHO, site Supervisor) team and Program Management team. Incident and near-miss incident reports must be submitted to the Project Manager, Program CIH/HSPAs and the Program Management team, as soon as possible, but no longer than 24 hours. At a minimum the Project Manager and Program Management personnel, including the Program CIH must be verbally notified, immediately

or in a case where emergency medical treatment is required, as soon as injured personnel have been transported to and received by a medical treatment facility.

In addition to the above, the Project Manager (or site supervisor when designated by the Project Manager or Program Management team) must also be responsible for reporting all injuries to NAVFAC as soon as reasonably possible but no later than 24 hours. Where an incident has, or appears to have, any of the consequences listed below, these incidents shall be immediately reported to NAVFAC.

- a. Fatal injury/illness;
- b. Permanent totally disabling injury/illness;
- c. Permanent partial disabling injury/illness;
- d. Three or more persons hospitalized as inpatients as a result of a single occurrence;
- e. \$200,000 or greater accidental property damage or damage in an amount specified by USACE in current accident reporting regulations
- f. Arc Flash Incident/ Accident

Except for rescue and emergency measures, the accident scene shall not be disturbed until it has been released by the investigating official. The Contractor is responsible for obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. The Contractor shall assist and cooperate with personnel conducting investigations on behalf of NAVFAC.

In addition to the incident and near-miss incident investigation report forms contained in **Attachment 9** of this APP, for all OSHA recordable accidents, property damage in excess of \$2,000 a Contractor Significant Incident Report (CSIR) must also be completed. If the CSIR is being used as initial notification of a Fatality or High Visibility Mishap. The initial form is due within 4 hours of a serious accident. A CSIR form marked 'Follow-up' or 'Final' is required within 5 days.

8.2.1 Best Management Practices for Incident Investigation

The causes of loss and near-loss incidents can be similar, so by identifying and correcting the causes of loss and near-loss incidents, future loss incidents may be prevented. When loss or near-loss incidents occur, identifying and correcting conditions or acts that create these incidents can be achieved by engaging the following processes:

1. Gathering all relevant facts, focusing on fact-finding, not fault-finding, while answering the "who, what, when, where, and how" questions.
2. Draw conclusions, putting facts together into a probable scenario.
3. Determine the incident root cause(s) and contributing factors of incidents. These are basic factors on why or how conditions or acts are created that result in incidents.
4. Develop and implement solutions, matching all identified root causes and contributing factors with solutions so that future conditions or acts that have attributed to incidents are eliminated in the future.
5. Communicate incident as a lesson learned to all project personnel.
6. File follow-up on implemented corrective action to confirm solution is appropriate.

The purpose of an incident investigation is to understand how the incident happened, analyze the root causes, and prevent recurrence by implementing corrective actions. To conduct an effective investigation, all information must be as detailed and comprehensive as possible. The investigation must be based on facts that clearly identify the sequence of events and the factors that contributed to the incident. The investigation team should not be involved with any punitive actions resulting from the investigation. Fairness and impartiality are essential. The following provides general Best Management Practice guidance in completing incident investigations.

1. An unbiased approach is necessary to obtain objective findings.
2. Visit the accident scene as soon as possible while the facts are fresh and before witnesses forget important details.
3. If possible, interview the injured worker at the scene of the accident and "talk" through re-enactment.
4. Conduct all interviews as privately as possible. Interview witnesses individually and separately. Talk with anyone who has knowledge of the accident/incident, even if he/she did not actually witness it. Only retrieve witness statement from individuals who actually observed the accident/incident. Document witness interviews.
5. Document details graphically. Use the IRF as well as sketches, diagrams, and photographs as needed. Take measurements where appropriate.
6. Focus on the causes and hazards leading to the accident/incident. Develop an analysis of what happened, how it happened and how it could have been prevented. Determine what caused the accident/incident itself, not just the injury.
7. Include a Corrective Action plan in every investigation. Describe how you will prevent such accidents in the future. Completion of the Root Cause Analysis may assist in the formulation of such plans.
8. Save any evidence if a third party or defective product contributed to the accident/incident. It should be critical to the recovery of claims costs.

9.0 Plans Required by the Safety Manual

9.1 Layout Plans

Site locus maps, layout plans, haul route maps, drawings, or sketches are included in the project specific specifications and/or Work Plan, for which this APP is an integral component of and need not be reduplicated herein. A Site Logistics Map can be found in Section 2.

9.2 Emergency Response Plans

9.2.1 Emergency Planning

(Reference CH2M HILL SOP # HSE&Q 106, Emergency Planning)

The site supervisor/FTL and/or SSHO performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with on-site parties, the NAVFAC point of contact (POC), and local emergency-service providers as appropriate. These pre-emergency planning activities include the following:

- Prior to the start of field work, perform a rehearsal of the Emergency Plans within this section. Any deficiencies shall be noted in the deficiency tracking log (see section 10.3.1) and corrected prior to the start of work.
- Review the facility emergency and contingency plans where applicable.
- Determine what onsite communication equipment is available (e.g., two-way radio, air horn).
- Verifying that the “Buddy System” will and is being used for all assigned work.
- Determine what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Where appropriate and acceptable to the client, inform emergency room and ambulance and emergency response teams of anticipated types of site emergencies.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, supplies, and potable water.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.
- Rehearse the emergency response plan before site activities begin, including driving route to hospital.

- Brief new workers on the components of the APP and emergency response plan.

9.2.2 Emergency Equipment and Supplies

The SSHO should verify the availability and readiness of emergency support equipment listed below.

Emergency Equipment and Supplies	Location
20 LB (or two 10-lb) fire extinguisher (A, B, and C classes) w/ annual maintenance and monthly inspection tags	Support Area
2.5 – 5 LB fire extinguisher (A, B, and C classes) w/ annual maintenance and monthly inspection tags	Heavy equipment
First aid kit/CPR Shield	Support Area or Field Vehicle
Eye wash	Support Area or Field Vehicle
Potable water	Support Area
Blood borne-pathogen kit	Support Area or Field Vehicle
Additional equipment (specify): Mobile phone and contact information	Support Area or Field Vehicle for site supervisor, management and SSHO at a minimum
Spill Control/Clean-up Materials/Proper Spill Response PPE	Construction Support Area/

9.2.3 Evacuation

The SSHO will direct the coordination of response to emergency or medical support situations. Response considerations include the following elements:

- Evacuation routes and assembly areas will be specified at the commencement of field work. Evacuation route(s) and assembly area(s) will be designated by the site supervisor/FTL or SSHO before work begins and posted at the designated evacuation rally point or construction support facility.
- Personnel shall be advised of the assembly and accounting process during emergency conditions, able to understand evacuation signals and know where final evacuation assembly areas are located. The site supervisor or SSHO will account for personnel assembly area(s).
- Designation of a vehicle to be available to support emergency conditions or response actions.
- Evaluation of existing and potential hazards that may be associated with any experienced emergency condition and mitigation measures necessary to control hazards so the response measures can be executed without additional danger.
- Assessment of the situation and condition of any victims.
- Determination of the resources needed for victim stabilization and transport and additional emergency support.
- Enforcement of the Buddy System. No one will be permitted to perform a response to an emergency condition alone.
- Removal of injured personnel from the area and/or control of the emergency condition.

- i) Decontamination of injured parties will be accomplished after stabilization of their medical conditions, where necessary. Gross decontamination may be required if their condition poses immediate threat to the victim's life. If decontamination may cause additional harm to an injured person, then alternate measures such as wrapping the injured person in material to prevent the spread of contamination during extrication and transport may be required. In this situation, emergency medical transport personnel and the receiving medical facility must be advised of potential contamination issues of injured personnel, as early as possible.

Evacuation signals for the project site are listed below.

Signal	Meaning
Grasping throat with hand	Emergency-help me.
Thumbs up	OK; understood.
Grasping buddy's wrist	Leave area now.
Continuous sounding of horn	Emergency; leave site now.
(Verify signal does not coincide with evacuation signals for government personnel in close proximity to the site)	
"Air raid"-type siren	Leave site immediately
Severe Weather Warnings (radio, TV, internet)	Leave the region in accordance with the facility evacuation orders or directives from program/project management team

Figure 9-1, below, depicts an Evacuation Route Map for Monroe County, FL, where NAS Key West is situated in. Primarily this Evacuation Route would be used for evacuation of Monroe County by State order due to severe weather conditions, but may also be used for evacuation of NAS Key West in the event of a national emergency.

FIGURE 9-1
EVACUATION ROUTE MAP – NAS KEY WEST



AGVIQ-CH2M HILL Project – Emergency Contacts

Sidney Allison – Program Manager: Phone (843) 242-8018/ (843) 813-2672 (cell)

Michael Halil – Deputy Program Manager: Phone (904) 777-4812 x 233/ (904) 219-6277 (cell)

Amy Twitty– Project Manager (overall): (850) 232-0320 (cell)

9.2.4 Procedures and Tests

It is the intention of the project team to verify that emergency response processes are in place and capable of being executed, prior to the start of field assignments. However, because of the secure nature of the facility, response to medical or fire emergencies will most likely be by installation personnel or even possibly by outside public responders with secured or escorted access. As such, it may be impractical and disruptive to the primary mission of these responders to perform “procedural response testing”. In this case, the designated site supervisor/FTL or SSHO shall verify that emergency services are available for response, that contact information is appropriate, and that responders know how to access anticipated work areas.

9.2.5 Spill Plans

The initial response to any spill or discharge will be to protect human health and safety, and then the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

If for some reason a chemical spill is not contained, but inherent process, contained within a dike or sump area, an area of isolation must be established around the spill. The size of the area will generally depend on the size of the spill AND the materials involved. If the spill is large (greater than 55 gallons) and involves a tank or a pipeline rupture, an initial isolation of at least 100 feet in all directions should be used, depending on the hazards posed by the spilled or released material. Small spills (less than or equal to 55 gallons) or leaks from a tank or pipe, depending on the hazards posed by the spilled or released material, will require evacuation of at least 50 ft in all directions to allow cleanup and repair and to prevent exposure. When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazard area and must maintain appropriate training, and be enrolled in a medical surveillance program in accordance with the requirements of 29CFR1910.120 and possess proper experience and PPE, to do so. If possible, the area will be roped off or otherwise blocked to provide restricted access to authorized personnel only.

NAS Key West follows both EPA and FDEP spill response criteria outlined with the Rules. Spills greater than 25 gallons on pervious soils or greater than 100 gallons on impervious surfaces require a formal spill response. AGVIQ-CH2M HILL will utilize the NAS Key West Spill Response Procedures outlined within the Facility Response Plan (FRP).

If the spill results in the formation of a toxic vapor cloud (by reaction with surrounding materials or by outbreak of fire) or creates a “toxic” or Immediately Dangerous to Life and Health situation then further evacuation and response procedures must be engaged. In general, an area at least 500 feet wide and 1,000 feet long will be evacuated downwind if volatile materials are spilled. (Consult the DOT Emergency Response Guide for isolation distances for listed hazardous materials.)

If an incident may threaten the health or safety of the surrounding community, the public will be informed (via proper local and state emergency management planning agencies) and possibly evacuated from the area. The onsite emergency coordinator will inform the proper agencies in the event this is necessary. A Project Emergency Contact List is provided in **Attachment 4** of this APP. For work at the NAS Key West, it is the understanding of AGVIQ-CH2M HILL that such chemicals or materials that could create such a situation are not present on site nor will AGVIQ-CH2M HILL bring such materials on-site as part of its scheduled work.

Reporting of spills or releases of oil or hazardous materials to appropriate agencies and stakeholders (i.e. **NAVFAC, EPA, US Coast Guard, State DEP, the LECA** etc.) must be reported when spilled or released quantities of oil or hazardous materials are in excess of established Reportable Quantities (RQs) for the material in questions.

In a spill or release response/containment, personnel shall take the following measures:

- Immediately warn any nearby workers and notify individual responsible for site operations.
- Assess the spill area to ensure that it is safe to respond.
- Evacuate area if spill presents an emergency.
- Provide notification to project stakeholders.
- Ensure all unnecessary persons are removed from the hazard area.
- Put on protective clothing and equipment.
- If a flammable material is involved, remove all ignition sources, and use only spark- and explosion-proof equipment for recovery of material.
- Remove all surrounding materials that could be especially reactive with materials in the waste. Determine the major components in the waste at the time of the spill.
- Stop source of spill and establish site control for spill area.
- If wastes reach a storm sewer, dam the outfall by using sand, earth, sandbags, etc. Pump this material out into a temporary holding tank or drums as soon as possible.
- Place all small quantities of recovered liquid wastes (55 gallons or less) and contaminated soil into drums for incineration or removal to an approved disposal site.
- Spray the spill area with foam, if available, if volatile emissions may occur.
- Apply appropriate spill control media (e.g., clay, sand, lime) to absorb discharged liquids.
- For large spills, establish diking around leading edge of spill using booms, sand, clay, or other appropriate material. If possible, use diaphragm pump to transfer discharged liquid to drums or holding tank. Follow proper ground and bonding procedures of equipment during recovery efforts. Intrinsically safe equipment must be used in recovery operations.
- For small fires or chemical releases, actions to be taken include the following:
 1. Shut down operations and evacuate the immediate work area
 2. Notify appropriate response personnel
 3. Account for personnel at the designated assembly area(s)
 4. Assess the need for site evacuation, and evacuate the site as warranted

Instead of implementing a work-area evacuation, small fires or spills posing minimal safety or health hazards may be controlled by onsite personnel, assuming that personnel who respond to these emergencies are properly trained to do so and wearing appropriate PPE to protect themselves against hazards that may be associated with the response.

In addition to the above, AGVIQ-CH2M HILL will have project field staff that are trained in accordance with 29CFR1910.120, are enrolled in a medical surveillance program meeting the criteria of 29CFR1910.120(f) and have previous experience training to mitigate unanticipated small releases of materials that could occur on this project (i.e. Petroleum, Oil or Lubricants) with heavy equipment and spill materials that will be readily available at the project site.

9.2.5.1 Anticipated Hazardous Materials

The following is a list of hazardous materials or chemicals that may be brought on-site and incorporated as part of the final completion of the work, generated during the execution of the work for offsite disposal or recycling or otherwise used to facilitate site work. These hazardous materials or chemicals may require spill prevention and countermeasure control processes to ensure sensitive environmental receptors are not adversely impacted in the event of a spill or release of these materials.

- Gasoline (small metal safety containers for fueling small engine equipment).
- Diesel fuel in heavy equipment.
- Marking Paint
- Minor quantities of grease, motor oil and hydraulic fluid
- Insect repellent(s)

9.2.5.2 Notification

In the event a spill occurs that requires notification, a project person shall follow the “AGVIQ-CH2M HILL Incident Notification Process and Lines of Authority” organizational chart identified in **Section 4.4** of this APP.

In addition, the AGVIQ-CH2M HILL Project Manager shall make notification to the designated project NAVFAC POC and environmental compliance representative(s) or other designated NAVFAC personnel, such that additional appropriate community and/or federal/state agencies may be engaged and notified, as applicable. The AGVIQ-CH2M HILL overall Project Manager shall coordinate with the designated project NAVFAC POC for support with regard to adhering to local, state, or federal regulations for spill notification clean-up and closure requirements.

AGVIQ-CH2M HILL will utilize the NASKW Spill Response Procedures outlined within the FRP.

It is understood that appropriate NAVFAC notification contacts shall be identified at the project Pre-Construction Conference and incorporated for reference, herein in the Emergency Contact List, in the final executed version of this APP.

9.2.6 Firefighting Plan

AGVIQ-CH2M HILL personnel are not considered Firefighting Organizations or Fire Brigades. Only “small/containable” fires that are containable by the use of first response fire protection equipment (i.e. 2.5 to 10 lb ABC fire extinguishers) may be controlled by AGVIQ-CH2M HILL personnel. All other response shall be considered firefighting measures and shall be conducted by facility provided or public agency firefighting teams.

Fire prevention measures and first response fire protection equipment shall be conducted in accordance with the information identified in **Section 9.7 Health and Safety Hazard Control Program – Fire Prevention**, and **Section 9.2 Emergency Response Plans** of this APP, respectively.

9.2.7 Posting of Emergency Telephone Numbers

Emergency contact numbers appropriate to project operations are included in **Attachment 4** of this APP and are referenced as the “Emergency Contact List”. Where temporary construction support facilities are established at the project site, this Emergency Contact List shall be posted in a conspicuous location. Where temporary construction facilities are not allowed or provided, the list shall be available for quick reference by the AGVIQ-CH2M HILL personnel via this APP and location shall also be made known to designated site personnel. There are currently no plans to provide temporary construction support facilities.

9.2.8 Man Overboard / Abandon Ship

(Reserved)

9.2.9 Medical Support

Location and direction to medical support facilities shall be posted in a conspicuous location where temporary construction facilities are established at the project Site. Where temporary construction facilities are not allowed or provided, the list shall be available for quick reference by site supervisor personnel executing site operations and its location shall also be made known to other site personnel. There are currently no plans to provide temporary construction support facilities.

In addition, the project shall be outfitted with first aid kits of suitable size and quality (contents) to meet health and safety requirements for on-site first aid and CPR response. Personal protective devices shall be provided such that universal precautions against blood borne pathogens can be exercised while administering CPR or first aid. Eye wash stations, either portable or stationary, will also be available.

An effective means of communication to summon transportation of injured workers to medical treatment facilities must be evaluated and established prior to the start of field activities. Communication devices shall be tested in the area of use to assure functionality. When a medical facility or physician is not accessible within five (5) minutes of an injury to a group of two or more employees for the treatment of injuries, at least two (2) employees on each shift shall be qualified to administer first-aid and CPR.

AGVIQ-CH2M HILL employee injuries and illnesses must also be reported to the Project and Program Management team identified in section 4.0 this and APP Human Resources contacts in **Attachment 4**, once the notification requirements identified in Section 4.4 of this APP have been fulfilled. If there is doubt about whether medical treatment is necessary, or if the injured person is reluctant to accept medical treatment, contact the designated medical consultant or site Emergency Response Support personnel, as applicable.

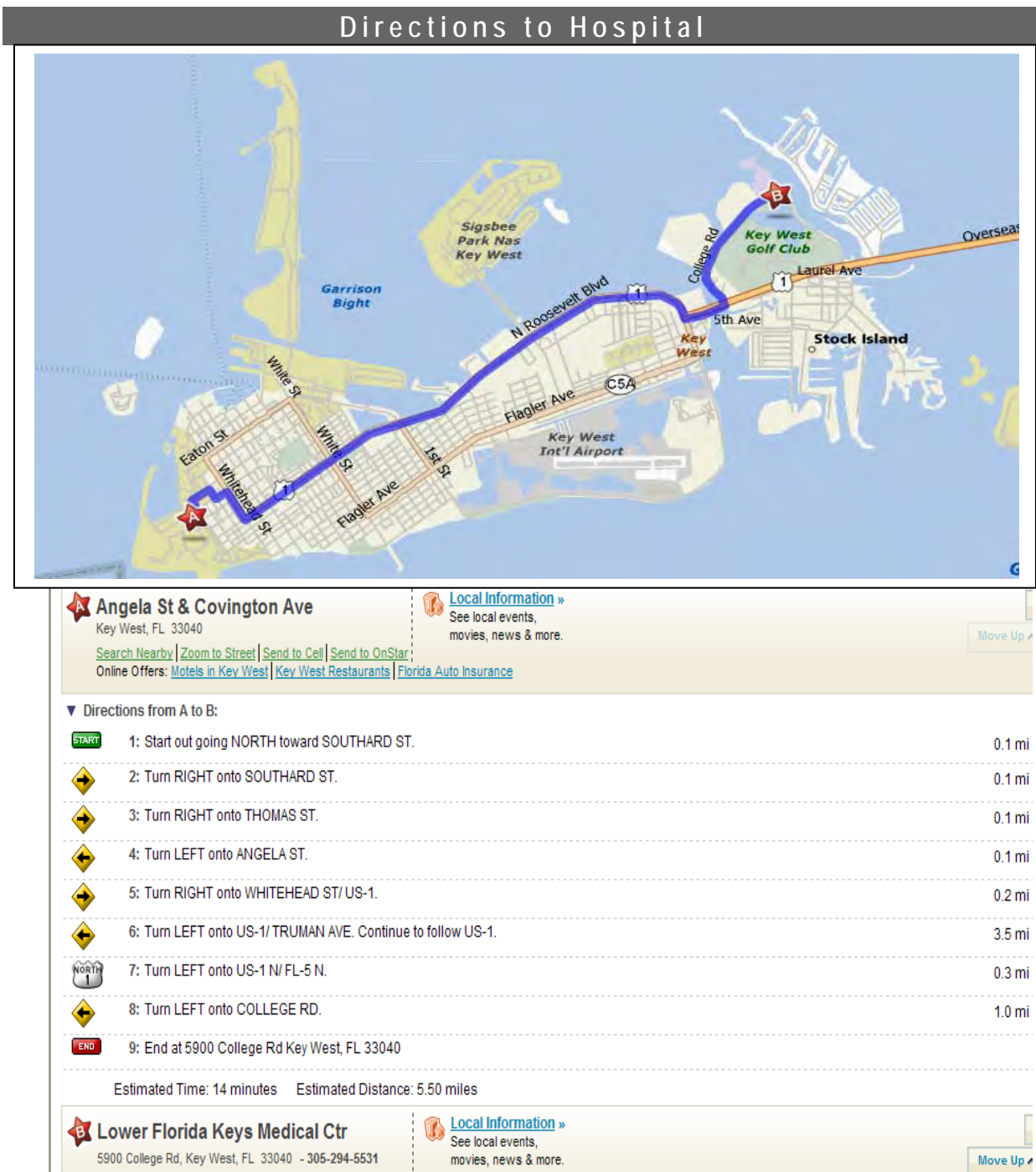
It must be understood that for life threatening emergencies, the priority is to get or summon medical attention immediately.

During non-emergencies, follow these procedures as appropriate.

- Notify appropriate emergency response authorities (e.g., 911).
- The SSHO will assume charge during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room.
- Prevent further injury.

- Initiate first aid and CPR where feasible and where worker “Universal Precautions” to Blood borne Pathogens can be completed.
- Perform decontamination where feasible; lifesaving and first aid or medical treatment take priority.
- Make certain that the injured person is accompanied to the emergency room.
- When contacting the medical consultant, give your name and telephone number, the name of the injured person, the extent of the injury or exposure, and the name and location of the medical facility where the injured person was taken.
- Report incident as outlined in Section 8.0 and in accordance with the “Primary Lines of Authority identified in section 4.4 of this APP.
- A map showing the route to the local hospital is shown on Figure 9-2.

FIGURE 9-2
Hospital Route Map – Lower Keys Medical Center, Key West, FL



Lower Keys Medical Center
5900 College Road
Key West, Florida
305-294-5531

AGVIO-CH2M HILL Project – Emergency Contacts

Sidney Allison – Program Manager: Phone (843) 242-8018/ (843) 813-2672 (cell)

Michael Halil – Deputy Program Manager: Phone (904) 777-4812 x 233/ (904) 219-6277 (cell)

Amy Twitty– Project Manager (overall): (850) 232-0320 (cell)

9.3 Plan for prevention of Alcohol and Drug Abuse

The AGVIQ-CH2M HILL policy statement on alcohol and drug abuse is provided in **Section 10.5** of the APP.

9.4 Site Sanitation Plan

Toilet facilities on site shall be provided as follows:

Minimum Toilet Facilities at Construction Sites	
Number of Personnel	Number of Toilets
20 or fewer	One
20 or greater	One toilet seat and one urinal per 40 workers
Greater than 200	One toilet seat and one urinal per 50 workers

The above requirements do not apply to mobile crews or to normally unattended work locations if employees working at these locations have transportation immediately available to nearby toilet facilities. Separate toilet rooms for each sex need not be provided if toilet rooms can only be occupied by one person at a time can be locked from the inside, and contain at least one toilet seat.

Toilet facilities shall be constructed so the occupants are protected against weather and falling objects; all cracks shall be sealed; and the door shall be tight-fitting, self-closing, and capable of being latched. Adequate ventilation shall be provided and all windows and vents shall be screened. Toilet facilities shall be constructed so that the interior is lighted.

Provisions for routinely servicing and cleaning all toilets and disposing of the sewage shall be established before placing toilet facilities into operation. The method of sewage disposal and the location selected shall be in accordance with federal, state, and local health regulations.

Washing facilities shall be provided at toilet facilities and as needed to maintain healthful and sanitary conditions. Each washing facility shall be maintained in a sanitary condition and provided with water (either hot and cold running water or tepid running water), soap, and individual means of drying. If it is not practical to provide running water, hand sanitizers may be used as a substitute. Washing facilities shall be close to the work site.

Trash and garbage generated by the normal site operations must be properly stowed, containerized, and secured such that vermin will not be attracted and disposed of off-site on a regular basis.

9.5 Access Plan

The site access is anticipated to be the same as the Emergency Evacuation Route contained in Figure 9-1, section 9.2.3 of this APP.

9.6 Respiratory Protection Plan

(Reference SOP # HSE&Q 121, Respiratory Protection)

(Reserved)

9.7 Health and Safety Hazard Control Program

Exposure to certain project specific hazards in the work place may include injury/accidents, occupational illnesses or property damage due to execution of a variety of assigned tasks or as a result of existing Site conditions. This section of the APP is provided to aid employees in the recognition of potential specific and general project hazards and provide procedures and practices to be implemented on the project site that may facilitate the reduction or elimination of occupational incidents that may be attributed to identified projects hazards. All AGVIQ-CH2M HILL personnel are required to contact the designated Project Manager, SSHO, Program CIH/HSPAs identified in this APP regarding any questions or concerns to ensure the execution of this task order in a healthy and safe manner.

The following areas/activities are not specifically covered under this APP/HSP and must not be performed unless this APP/HSP is amended and approved accordingly.

- Areas presenting exposed energized electrical equipment.
- Areas where there is an unprotected (e.g., no guardrail) fall exposure greater than 4'.
- Areas where Materials Presenting a Potentially Explosive Hazard (MPPEH)/ Munitions and Explosives of Concern (MEC) maybe encountered. Activities requiring the use of scaffolding, an aerial lifts or hoisted personal platforms.
- Activities where potential radiological exposure hazards may exist
- Exposure to chemicals not identified by this APP/HSP.

9.7.1 Constituents of Concern

Site COCs that are associated with this TO are listed in Section 9.33.2 and Table 9-1. The requirements for the use of PPE and worker exposure monitoring and air sampling in connection with the execution of identified project DFOWs are provided in Tables 9-2 and Table 9-3, respectively. Hazard Communication requirements can be found in Section 9.8 of this APP.

9.7.2 Adverse Weather

Sudden inclement weather can rapidly encroach upon field personnel. Because of the time of year (fall) that this project is being executed and its geographical location (Florida Keys) field crew members could experience a variety of adverse weather conditions during the course of a normal work assignment. Personnel performing work outdoors should carry clothing appropriate for foul weather conditions (rain gear, etc) that may be expected. In severe weather conditions, (i.e., high wind, rain squalls, electrical storms), the field crews must evacuate from an outdoor work environment area and find safe shelter until the weather abates and until a decision is made to resume the field activities. Even though much of the field operations may be performed within sheltered environments, the following information is provided for field personnel subject to outdoor work environments as procedures must be exercised where adverse weather is encountered or is expected to occur during an assigned work day.

- Frequently observe the skyline for developing rain squalls, thunder storms or other severe weather systems that may be developing. Check internet, local TV weather or radio channels for daily forecasts and plan daily work activities accordingly. Have a portable radio available on-site to monitoring local weather or marine forecasts. If on-site internet or radio monitoring are not available, check with the with home office support

personnel who may be able to determine the severity of developing storm systems through internet access or other methods.

- Shut down operations during heavy rain/lightning events, high wind or heavy snow conditions and identify “safe haven” location. Safe haven locations should be identified prior to the start of work. Safe haven structures must be grounded where there is a potential for a lightning event.
- When excessively hot or cold ambient temperatures exist heat and cold stress monitoring must be implemented, as necessary, defined in section 9.14 of this APP.
- Implement the Hurricane Preparedness Plan (Attachment 10) contained in this HSP, as conditions warrant.

9.7.2.1 Lightning

Preparedness and caution are the best defenses against lightning. Many lightning deaths and injuries happen before or after a thunderstorm’s peak. The site manager or SSHO shall monitor weather forecasts for predictions of electrical storms in the area. At first sight of lightning, operations shall be stopped and only resumed when conditions permit. The site manager or SSHO shall monitor weather conditions to determine when it is appropriate to resume work. The lightning safety recommendation is 30-30: Seek refuge when thunder sounds within 30 seconds after a lightning flash; and do not resume activity until 30 minutes after the last thunder clap. Some other general precautions include:

- Know where to go and how long it will take to get there. If possible, take refuge in a large building or vehicle. Do not go into a shed in an open area.
- The inclination to see trees as enormous umbrellas is the most frequent and most deadly mistake. Do not go under a large tree that is standing alone. Likewise, avoid poles, antennae and towers.
- Stay away from lakes, streams, pools, or any water.
- Stay away from railroad tracks that can carry lightning charges for long distances.
- If the area is wide open, go to a valley or ravine, but be aware of flash flooding. Do not stand on top of a hill.
- If you are caught in a level open area during an electrical storm and you feel your hair stand on end, drop to your knees, bend forward and put your hands on your knees or crouch. The idea is to make yourself less vulnerable by being as low to the ground as possible and taking up as little ground space as possible. Lying down is dangerous, since the wet earth can conduct electricity. Do not touch the ground with your hands.
- Do not use telephones during electrical storms, except in the case of emergency.
- A Hurricane Preparedness Plan (HPP) is not prepared for this project as this area is not known for hurricanes.

9.7.3 Aerial Lifts

(Reference CH2MHIILL SOP # HSE&Q-301, Aerial Lifts)

(Reserved)

9.7.4 Air Compressor Operations

(Reserved)

9.7.5 Asbestos

(Reference CH2MHIILL SOP # HSE&Q-502, Asbestos)

(Reserved)

9.7.6 Biological Hazards and Controls

The following sections provide information on potential biological hazards. Site personnel shall notify their overall supervisors and their project site supervisor of any potential allergic reactions that may occur as a result of contact with biological hazards in the workplace. If employee antidotes are required to counteract allergic reactions from biological hazard exposure, employees shall make personnel, who may be required to administer personal antidotes, aware of the location, type, and quantity of antidotes needed to counteract any potential allergic reaction(s).

9.7.6.1 Venomous Snakes

Although the potential exposure to poisonous snakes during the execution of this project is considered to be negligible, this information is included for the purposes of providing employee awareness.

Snakes typically are found in underbrush, tall grassy areas, near cover such as fallen logs, brush piles, rock walls, abandoned foundations, or rock ledges. They may be resting or waiting for prey. Watch where you place your hands and feet. Walk around, rather than over, fallen logs. When traveling through areas thought to contain venomous snakes, you can minimize the possibility of an encounter by using common sense. If you encounter a snake do your best to stay calm and look around as there may be other snakes. Turn around and walk away on the same path you used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. Seek medical attention immediately. **DO NOT apply ice, cut the wound, or apply a tourniquet.** Try to identify the type of snake: note color, size, patterns, and markings to assist medical personnel with proper treatment measures (see below – Identification of Poisonous Snakes). Of the 45 species of snakes throughout Florida, 6 are venomous and are as follows:

1. Southern Copperhead



2. Canebrake Rattlesnake (aka Timber Rattlesnake)



3. Eastern Diamondback Rattlesnake



4. Pigmy Rattlesnake (Southeast NC)



5. Cottonmouth (aka Water Moccasin)



6. Coral Snake



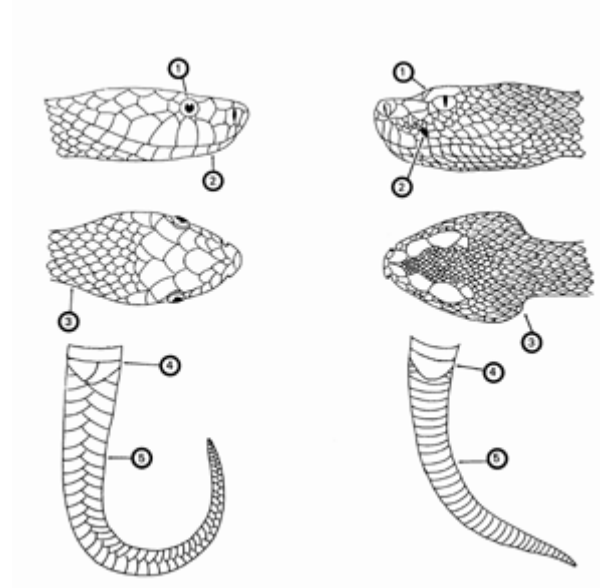
Identification of Poisonous Snakes

(Major Identification Features) non-venomous snake

1. Round pupils
2. No sensing pit
3. Head slightly wider than neck
4. Divided anal plate
5. Double row of scales on the underside of the tail

venomous snake

1. Elliptical pupils
2. Sensing pit between eye and nostril
3. Head much wider than neck
4. Single anal plate
5. Single scales on the underside of the tail



9.7.6.2 Alligators

(Reserved)

9.7.6.3 Poisonous Plants

Poison ivy, poison oak, and poison sumac typically are found in brush or wooded areas. They are more commonly found in moist areas or along the edges of wooded areas. Shrubs are usually 12" to 30" high, or can also be a tree-climbing vine, with triple leaflets and short, smooth hair underneath. Plants are red and dark green in spring and summer, with yellowing leaves anytime especially in dry areas. Leaves may achieve bright reds in fall, but plants lose its (yellowed, then brown) leaves in winter, leaving toxic stems. All parts of the plant remain toxic throughout the seasons.

Become familiar with the identity of these plants (see below). Wear protective clothing that covers exposed skin and clothes. Avoid contact with plants and the outside of protective clothing. If skin contacts a plant, wash the area with soap and water immediately. If the reaction is severe or worsens, seek medical attention.

Poison Ivy



Poison Sumac



Poison Oak



Exposure:

Contamination with poison oak, ivy or sumac can happen through several pathways. These include

- Direct skin contact with any part of the plant.
- Contact with clothing that has been contaminated
- Contact from removing shoes that have been contaminated. (your shoes are coated with oil)
- Sitting in a vehicle that has become contaminated
- Contact with any objects or tools that have become contaminated.

Exposure to poison oak, ivy or sumac often becomes an OSHA recordable illness. Take proper action if you are potential contaminated. The dermatitis is so severe that many people seek medical care and get prescription cortisone creams or steroid shots to reduce the suffering caused by the itch.

For CH2M HILL employees exposed on the job, contact WorkCare at 866-893-2514 for assistance with the management of the exposure. For work-related injuries or illnesses to CH2M HILL personnel, inform the AGVIQ-CH2M HILL Project Manger (overall) and the

AGVIQ-CH2M HILL Program CIH and help Human Resources administrator complete a HITS (Hours & Incident Tracking System) Form. HITS must be completed within 24 hours of incident. See **Attachment 4** of this APP for additional information.

For AGVIQ employees who are injured at work, see the closest qualified medical facility for medical attention notify your supervisor and the Human Resource office for injury management assistance. See **Attachment 4** of this APP for additional information.

Best Work Practices:

If you must work on a Site that has been identified to potentially contain poison oak, ivy or sumac, the following precautions are necessary:

- Identify plants containing urushiol – The best way to prevent exposure is to recognize the plant and avoid working in areas where poison oak, ivy or sumac is present.
- If you must work in areas with urushiol containing plants, contact you project manager and health and safety manager to determine the best procedures to prevent contamination.
- Do not drive vehicles onto the Site where it will come into contact with poison oak, ivy or sumac. Vehicles which need to work in the area, such as DPT rigs or heavy equipment must be washed and decontaminated as soon as possible after leaving the Site.
- All tools used in the area, including those used to cut back the plants, surveying instruments used in the area, air monitoring equipment or other test apparatus must be decontaminated before they are placed back into the Site vehicle. If on-Site decontamination is not possible, use plastic to wrap any tools or equipment until they can be decontaminated. If working on or near the ground surface, place plastic on the ground to cover the grass and foliage.
- PPE, including Tyvek coveralls, gloves, and boot covers must be worn. PPE and plastic used to cover the ground must be placed into separate plastic bags and sealed if they are not disposed immediately into a trash receptacle.
- Shower as soon as possible to remove any potential contamination. Any body part with suspected or actual exposure should be washed with “Tecnu” or other product designed for removing urushiol. If you do not have Tecnu wash with cold water. Do not take a bath, as the oils can form and invisible film on top of the water and contaminate your entire body upon exiting the bath.
- Zanfel™ may also be used to treat exposed areas that are experiencing signs and symptoms of poison oak, ivy or sumac contamination. Refer to the Zanfel™ information guide below for specific product and contact information.
- Use products such as IvyBlock™ to prevent poison oak, ivy and sumac contamination. IvyBlock™ is approved by the FDA to prevent the rash caused by poison oak, ivy and sumac.
- If there is exposure use the following first aid procedures, or others you may find to alleviate the pain and itching.

Poison Oak, Ivy, and Sumac First Aid :

<p>Are there any of these problems?</p> <ul style="list-style-type: none"> • Swelling in the throat, tongue and/or lips • A hard time breathing or swallowing • Weakness, dizziness • Bluish lips and mouth • Unconsciousness <p>NO</p>	<p>YES</p> <p>Give First Aid</p> <p>Seek Emergency Care</p> <p>Use emergency kit with adrenalin, if available, and Get Emergency Care.</p>
<p>Do you have any of these problems?</p> <ul style="list-style-type: none"> • Skin that is very bright red. • Pus. • Rash that has spread to the mouth, eyes or genitals. • Rash on large areas of the body or the face. <p>NO</p>	<p>YES</p> <p>Give First Aid</p> <p>See Doctor</p> <p>Give first aid before seeing doctor:</p> <ul style="list-style-type: none"> • Take a hot shower (only after rash develops), put the rash area in hot water or pour hot water over it. Make sure the water is not too hot to burn the skin. The hot water causes itching at first, but brings relief later. Do not use soap. • Take an over-the-counter antihistamine, such as Benadryl, as stated on the label. • For weeping blisters: • Mix 2 teaspoons of baking soda in 1 quarter (4 cups) of water. • Dip squares of gauze in this mixture. • Cover the blisters with the wet gauze for 10 minutes, four times a day. (Do not apply this to the eyes.)
<p>Provide Self-Care</p>	

Self-Care/First Aid

- Wash (decontaminate) all affected areas with warm water and a strong soap.
- Keep your hands away from your eyes, mouth and face.
- Do not scratch or rub the rash.
- Apply any of these to the skin rash:
- Calamine (not Caladryl) lotion
- Zanafel™ lotion
- Zinc oxide ointment
- Paste made with baking soda - mix 3 teaspoons of baking soda with 1 teaspoon of water
- Take an over-the-counter antihistamine such as Benadryl, as stated on the label
- If self-care/first aid measures don't bring relief, call your doctor.

Urushiol Plant Facts:

Urushiol Oil is Potent

- Only 1 nanogram (billionth of a gram) needed to cause rash
- Average is 100 nanograms for most people

- 1/4 ounce of urushiol is all that is needed to cause a rash in every person on earth
- 500 people could itch from the amount covering the head of a pin
- Specimens of urushiol several centuries old have found to cause dermatitis in sensitive people.
- 1 to 5 years is normal for urushiol oil to stay active on any surface including dead plants
- Derived from **urushi**, Japanese name for lacquer

Myth	Fact
Poison oak, ivy, and sumac are contagious	Rubbing the rashes won't spread poison ivy to other parts of your body (or to another person). You spread the rash only if urushiol oil -- the sticky, resin like substance that causes the rash -- has been left on your hands.
You can catch poison ivy simply by being near the plants	Direct contact is needed to release urushiol oil . Stay away from forest fires, direct burning, or anything else that can cause the oil to become airborne such as a lawnmower, trimmer, etc.
Leaves of three, let them be	Poison sumac has 7 to 13 leaves on a branch, although poison ivy and oak have 3 leaves per cluster
Do not worry about dead plants	Urushiol oil stays active on any surface, including dead plants, for up to 5 years.
Breaking the blisters releases urushiol oil that can spread	Not true. But your wounds can become infected and you may make the scarring worse. In very extreme cases, excessive fluid may need to be withdrawn by a doctor.

New Cream to Treat Exposure to Poison Plants:

Exposure to poison oak, ivy and sumac can be uncomfortable, and in some cases the rash can become so severe that medical care is required. A relatively new product is available Zanafel™ (www.zanafel.com) that helps prevent blistering and itching from becoming severe. If you are working in an area with poison oak, ivy or sumac, you can obtain this cream by contacting and notifying your supervisor of the need to purchase this material.

Please remember, the cream does not replace preventative measures, including:

- Avoiding contact with poison oak, ivy and sumac.
- Wearing Tyvek coveralls and gloves to prevent contact.
- Washing with Tecnu® (or a similar product) after potential exposure.
- Washing clothing and decontaminating equipment with an oil-cutting detergent.

More information about Zanafel (from Zanafel):

Zanafel™ is an effective wash for urushiol-induced contact dermatitis. Urushiol is the toxin known to cause the itching and rash associated with poison oak, ivy, sumac, poisonwood, and related plants. Zanafel works by surrounding urushiol and bonding with it, thereby enabling it to be rinsed away. Unlike some products that require use within 10-20 minutes of contact or that required continued use until the rash is gone (which can take up to 5 weeks), Zanafel offers relief at any stages of the reaction and often with only one wash. Individuals with particularly severe reactions may require additional washes. Most individuals experience relief from the itching within 30 seconds of application. The rash will begin to subside within hours if the reaction is mild to moderate. Severe and systemic cases will still require medical attention. Severe cases are defined as breakouts that are present on more than 15-percent of the body, and new breakouts continue to develop after day 4.

9.7.6.4 Ticks

Ticks typically are in wooded areas, bushes, tall grass, and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size. Wear tightly woven light-colored clothing with long sleeves and pant legs tucked into/taped to boots; spray **only outside** of clothing with permethrin or permethrin and spray skin with only N, N-diethyl-meta-polyamide (DEET); and check yourself frequently for ticks. Where exposure to ticks is verified, personnel shall consider wearing “bug-out” suits to minimize potential exposures to ticks or other biting insects (i.e., chiggers). However, when these suits are used when ambient air temperatures are elevated (> 70 degrees) heat stress preventive measures and monitoring protocols must be implemented. See the Heat Stress section in this APP for additional information.

Hazard Control:

The methods for controlling exposure to ticks include, in order of most-preferred to least:

- Avoiding tick habitats and ceasing operations in heavily infested areas
- Reducing tick abundance through habitat disruption or application of acaricide
- Personal protection through use of repellants and protective clothing
- Frequent tick inspections and proper hygiene

Vaccinations are not available and preventive antibiotic treatment after a bite is generally not recommended.

Tick Identification:

There are five varieties of hard-bodied ticks that have been associated with tick-borne pathogens. These tick varieties include:

- Deer (Black Legged) Tick (eastern and pacific varieties)
- Lone Star Tick
- Dog Tick (American and Brown)
- Rocky Mountain Wood Tick
- Western Black-legged tick

Illnesses and Signs/Symptoms:

There are six distinguishable tick-borne pathogens that cause human illness in the United States. These pathogens may be transmitted during a tick bite – normally hours after attachment. The illnesses, presented in approximate order of most common to least, include:

1. Lyme (bacteria)
2. Rocky Mountain Spotted Fever (bacteria)
3. Ehrlichiosis (bacteria)
4. Southern Tick-Associated Rash Illness (bacteria)
5. Tularemia (Rabbit Fever) (bacteria)
6. Babesia (protozoan parasite)

Symptoms will vary based on the illness, and may develop in infected individuals typically between 3 and 30 days after transmission. Some infected individuals will not become ill or may develop only mild symptoms. These illnesses present with some or all of the following signs and symptoms: fever, headache, muscle aches, stiff neck, joint aches, nausea, vomiting, abdominal pain, diarrhea, malaise, weakness, and small solid, ring-like, or spotted rashes.

The bite Site may be red, swollen, or develop ulceration or lesions. A variety of long-term symptoms may result when untreated, including debilitating effects and death.

Tick Removal:

1. Use fine-tipped tweezers or shield your fingers with a tissue, paper towel, or nitrile gloves.
2. Grasp the tick as close to the skin surface as possible and pull upward with steady, even pressure. Do not twist or jerk the tick; this may cause the mouthparts to break off and remain in the skin. (If this happens, remove mouthparts with tweezers. Consult your healthcare provider if infection occurs.)
3. Do not squeeze, crush, or puncture the body of the tick because its fluids (saliva, hemolymph, and gut contents) may contain infectious organisms. Releasing these organisms to the outside of the tick's body or into the bite area may increase the chance of infectious organism transmission.
4. Do not handle the tick with bare hands because infectious agents may enter through mucous membranes or breaks in the skin. This precaution is particularly directed to individuals who remove ticks from domestic animals with unprotected fingers. Children, elderly persons, and immunocompromised persons may be at greater risk of infection and should avoid this procedure.
5. After removing the tick, thoroughly disinfect the bite Site and wash your hands with soap and water.
6. You may wish to save the tick for identification in case you become ill. Your doctor can use the information to assist in making an accurate diagnosis. Place the tick in a plastic bag and put it in your freezer. Write the date of the bite on a piece of paper with a pencil and place it in the bag. See "First Aid and Medical Treatment" information below.

Note: Folklore remedies such as petroleum jelly or hot matches do little to encourage a tick to detach from skin. In fact, they may make matters worse by irritating the tick and stimulating it to release additional saliva, increasing the chances of transmitting the pathogen. These methods of tick removal should be avoided. In addition, a number of tick removal devices have been marketed, but none are better than a plain set of fine tipped tweezers.

Previously infected individuals are not conferred immunity – re-infection from future tick bites can occur even after a person has contracted a tick-borne disease.

First-Aid and Medical Treatment:

Tick bites should always be treated with first-aid. Clean and wash hands and disinfect the bite Site after removing embedded tick. Consult a healthcare professional if infection or symptoms and effects of tick-borne illnesses are developing.

Medical treatments for tick-borne infections include antibiotics and other medical interventions. Diagnosis of specific illness involves both clinical and laboratory confirmations. Preventive antibiotic treatment in non-ill individuals who have had a recent tick bite is recommended in specific cases only.

Tick Analysis Procedure for Lyme disease:

- For tick removal, follow the instructions in your tick removal kit using a fine pointed pair of tweezers. If the tick is alive, place it in two layered zip-lock bags. It is highly recommended that you wear gloves when removing the tick from the skin to avoid infection.
- It is important to remove the entire tick and place it in a zip-lock bag. Place the zip-lock bag in an envelope and contact your applicable health care representative, project manager or HS&E representative (see **Attachment 4** of this APP) for instructions on where to send the tick for analysis of certain tick-borne pathogens.

9.7.6.5 Fire Ants

(Reserved)

9.7.6.6 Spiders - Brown Recluse

It is regarded by many as the most dangerous spider in the United States. Although Key West is generally not a known habitat of the Brown Recluse, it can be present as a result of interstate shipping/transportation the Brown Recluse spider can be found most anywhere in the United States.

Brown Recluse Spiders are usually 1 inch or larger in size, including the legs and can grow as large as 3 inches. Young Brown Recluse spiders are smaller and somewhat lighter in color. Brown recluse spider bites don't always hurt right away.



In fact, you may not know that you have been bitten until other symptoms appear. Symptoms of a brown recluse spider bite may include the following:

- Reddened skin followed by a blister that forms at the bite Site.
- Mild to intense pain and itching for 2 to 8 hours following the bite.
- An open sore with a breakdown of tissue (necrosis) that develops within a few hours to 3 to 4 days following the bite and the area may become painful, itchy, hot, swollen, red and tender. An irregular ulcerous sore, caused by necrosis, will often appear that is from 1/4 inch to 10 inches in diameter. Prompt attention is the best defense against preventing the necrosis. The wound is often described as being reddish and surrounded by a bluish area with a narrow whitish separation in between the red and the blue. This gives it the famous "bull's eye" pattern. In just hours, a bite from the highly venomous Brown Recluse spider can create blisters and cause tissue damage.

Some people have a severe, systemic (whole-body) reaction to brown recluse spider bites, including the rapid destruction of red blood cells and anemia. Signs and symptoms include:

- Fever and chills.
- Skin rash all over the body with many tiny, flat purple and red spots.
- Nausea or vomiting.
- Joint pain.

If you think you have been bitten by a brown recluse spider:

- Remain calm. Too much excitement or movement will increase the flow of venom into the blood.
- Try to collect the spider without being bitten (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider.
- Apply a cool, wet cloth to the bite or cover the bite with a cloth and apply an ice bag to the bite.
- Do not apply a tourniquet. It may cause more harm than benefit.
- Try to positively identify the spider to confirm its type.
- Seek prompt medical attention.

A brown recluse bite can be serious and will likely require immediate medical care. Seek medical attention if you believe you have been bitten by a recluse spider, especially if severe symptoms develop throughout your body or an open sore and necrosis develop. A brown recluse spider bite is diagnosed through a physical examination and questions about the bite. You should be prepared to describe the spider, where and when the bite took place, and what you were doing at the time. Your health professional will ask what your main symptoms are, when they began, and how they have developed, progressed, or changed since the bite.

Before utilizing outdoor temporary sanitary facilities, be sure to check the unit to verify there are not any spiders.

9.7.6.7 Spiders - Widow

There are three identified widow species that could potentially be encountered in Key West, are the Northern Black, Brown, and Red widows. Females range from 8-15 mm in body length; males are smaller, sometimes very small (2 mm). Most have globose, shiny abdomens that are predominantly black with red markings (although some may be pale and/or have lateral stripes), with moderately long, slender legs. These spiders are nocturnal and build a three-dimensional tangled web, often with a conical tent of dense silk in a corner where the spider hides during the day. In nature, most species are found under rocks and logs, but they readily adapt to human-altered environments, where they are most commonly found in outbuildings (sheds, barns, privies), water meter holes, nursery cans, and under any item or structure (e.g., barbeque grill, slide, sand box) that has been undisturbed for a lengthy period. Formerly, most bites by black widows (almost all by female spiders) occurred in outhouses, but presently, widow bites occur most frequently when the spider is trapped against human skin, either by reaching under objects where the spider is hiding or when putting on clothing, gloves or shoes containing the spider. Widow spiders are generally very timid and only bite in self-defense when they accidentally contact humans.

Black Widow



Red Widow



Brown Widow



Bite symptoms are systemic, spreading through the lymphatic system, and usually start about 1-3 hours after the bite. The most common symptoms are intense pain, rigid abdominal muscles, muscle cramping, malaise, local sweating, nausea, vomiting, and hypertension. Other symptoms may include tremors, labored breathing, restlessness, increased blood pressure, and fever. If left untreated, widow bite symptoms usually last 3-5 days.

If bitten, remain calm, and immediately seek medical attention (contact your physician, hospital and/or poison control center). Apply an ice pack directly to the bite area to relieve swelling and pain. Try to collect the spider, without being bitten, (even a mangled specimen has diagnostic value), if possible, for positive identification by a spider expert. A plastic bag, small jar, or pill vial is useful and no preservative is necessary, but rubbing alcohol helps to preserve the spider. A hospital stay may be recommended, particularly for those with a heart condition or with health problems. A physician may administer a specific antivenin to counteract the venom or calcium gluconate to relieve pain. Calcium gluconate and/or antivenin may be administered to relieve or counteract symptoms.

Before utilizing outdoor temporary sanitary facilities, be sure to check the unit to verify there are not any spiders.

9.7.6.8 Bloodborne Pathogens

Bloodborne pathogens are pathogenic microorganisms present in human blood or other potentially infectious material that can cause disease. These pathogens include, but are not limited to, the Hepatitis B Virus (HBV) and the Human Immunodeficiency Virus (HIV). Other potentially infectious material includes any human body fluid that is visibly contaminated with blood, such as saliva or vomit. It also includes all body fluids in situations where it is difficult or impossible to differentiate between body fluids, such as during an emergency response and any unfixed tissue (other than intact skin) from a human (living or dead).

In emergency medical situations, certain employees may need to render first aid as a collateral duty in response to workplace accidents or injuries. This category includes the SSHO, site managers/supervisors, or individuals certified in FA and CPR and shall have received training in exercising universal precautions against exposure to blood borne pathogens as a component to FA/CPR training, which meets the intent of 29CFR1910.1030. However, additional worker training programs in to bloodborne pathogens may also be required when it is expected that employees could contact landfill waste or other waste streams containing potentially infectious material. This situation is not reasonably expected for this project. Bloodborne pathogen employee training is also complemented by other regularly scheduled employer training curriculums that are typically executed for the HAZWOPER industry, regulated under 29CFR1910.120/29CFR1926.26. The only worker

exposure to blood borne pathogens anticipated for this project will potentially be to those individuals providing FA/CPR to an injured or “down” worker.

To eliminate or minimize employee exposure to blood borne pathogens, workers who may be exposed to blood borne pathogens or potentially infectious material must implement the following hazard control measures.

Employees expected to render first aid shall be cognizant of and adhere to the following with regard to potential exposure to bloodborne pathogens:

- First aid kits and a Bloodborne Pathogens Protection Kit shall be immediately available at the Site. The kit is commercially available through most safety or medical supply vendors.
- These kits shall contain gloves, masks, CPR protectors, biohazard disposal bags, antiseptic cleanser, splash-proof goggles, towels, wipes, and an absorbent powder to clean up spills. Gloves, masks, and other PPE measures must be donned by personnel responding to emergency or first aid situations where exposure to Bloodborne Pathogens could occur.
- A portable eye wash station or means of conducting eye washing or flushing shall be readily available at the project site location.
- Always wash your hands and face with antiseptic soap and running water after contacting potentially infectious material. If washing facilities are unavailable, use an antiseptic cleanser with clean paper towels or moist towelettes. When antiseptic cleansers or towelettes are used, always rewash your hands and face with soap and running water as soon as available. Do not consume food or beverages, smoke, chew tobacco, or perform another hand to eye/face/mouth activity until after thoroughly cleaning your hand (with antiseptic soap and water), then your face and only after the employee has removed themselves from the designated work area that contains materials that can be reasonably considered being contaminated with bloodborne pathogens.
- Use universal precautions when dealing with materials or situations where there is a potential for bloodborne pathogens. Universal precaution is an approach to infection control whereby all human blood and potentially infectious material are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.
- Personnel who may be exposed to Bloodborne Pathogens should review and implement all applicable components of CH2M HILL SOP # HSE&Q 202, Bloodborne Pathogens.

9.7.6.9 Mosquito Bites

Because of the recent detection of the West Nile Virus in the southeastern United States, it is recommended that preventive measures be taken to reduce the probability of being bitten by mosquitoes whenever possible. Mosquitoes are believed to be the primary source for exposure to the West Nile Virus as well as several other types of encephalitis. The following guidelines should be followed to reduce the risk of these concerns for working in areas where mosquitoes are prevalent.

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.

- Spray clothing with repellents containing pyrethrum or DEET because mosquitoes may bite through thin clothing.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 35% DEET. DEET in high concentrations (greater than 35%) provides no additional protection.
- Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands.
- Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.

Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

Symptoms of Exposure to the West Nile Virus:

Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death.

The West Nile Virus incubation period is from 3 to 15 days.

If you have any questions or to report any suspicious symptoms, contact the project Health and Safety Manager.

9.7.6.10 Rabid Animals

Encounters with a rabid animal can lead to rabies transmission when virus from the animal's saliva, brain tissue, or spinal fluid enters open cuts or wounds in skin or mucous membranes. Therefore, not every encounter with a rabid animal is a true exposure requiring intervention. Treatment is often provided unnecessarily to people who have encountered but had no true exposure to a potentially rabid animal.

Any penetration of the skin by an animal's teeth is considered a "bite exposure." Local wound care should be performed immediately on anyone bitten by an animal. Local treatment of wounds involving immediate and extensive washing of all bite wounds, scratches, or other Sites of potential exposure for 10 minutes with soap and water is arguably the most important measure for preventing rabies following an exposure to a rabid animal. Experiments done in animals suggest that thorough and vigorous cleansing to the depth of the wound with a 20% soap solution can reduce the risk of developing rabies. Tetanus booster vaccine (Td) should be given if indicated. A health care provider should be consulted to determine whether other measures are necessary. When a bite exposure has been determined, laboratory testing of the animal, if available, may be indicated depending upon the circumstances of the exposure (such as whether it was provoked or not) and the species involved. The risks associated with bites from different animals vary from place to place. For work on this particular contract, contact with rabid dogs, cats, raccoons, and rats could be possible.

"Non-bite exposures" include any scratches, abrasions, or contamination of mucous membranes by an infected animal's saliva, brain tissue, or spinal fluid. Other types of contacts (such as with the blood, urine, feces, or fur of an animal) would not by themselves be considered exposures capable of transmitting rabies even if the animal were known to be rabid. The virus is not hardy; once dry, saliva containing rabies virus is considered non-infectious.

9.7.7 Buried Objects/Utilities (locating)

Do not begin subsurface construction activities (e.g., excavation) or other ground disturbing activities until a check for underground utilities and similar obstructions has been conducted. Contact the local utility mark-out or locating service identified for the area of operations.

Local Utility Mark-Out Service

Name: Sunshine State One Call of Florida, Inc.

Phone: <http://www.callsunshine.com/corp/index.html>

Website: (800) 432-4770

The use of as-built drawings and utility company searches must be supplemented with a geophysical or other survey by a qualified, independent survey contractor to identify additional and undiscovered buried utilities. Examples of the type of geophysical technologies include:

- Ground Penetrating Radar (GPR), which can detect pipes, including both metallic and non-metallic gas pipes, tanks, conduits, and cables, at depths up to 30 feet depending on equipment. Sensitivity for both minimum object size and maximum depth detectable depends on equipment selected, soil conditions, etc.
- Radio Frequency (RF) involves inducing an RF signal in the pipe or cable and using a receiver to trace it. Some electric and telephone lines emit RF naturally and can be detected without an induced signal. This method requires knowing where the conductive utility can be accessed to induce RF field if necessary.
- Dual RF is a modified version of RF detection using multiple frequencies to enhance sensitivity but with similar limitations to RF.
- Ferromagnetic Detectors are metal detectors that will detect ferrous and non-ferrous utilities. Sensitivity is limited, e.g., a 100-mm iron disk to a depth of about one meter or a 25-mm steel paper clip to a depth of about 20 cm.
- Electronic markers are emerging technologies that impart a unique electronic signature to materials such as polyethylene pipe to facilitate location and tracing after installation. Promising for future installations but not of help for most existing utilities already in place.

9.7.7.1 Procedure

The following procedures shall be used to identify and mark underground utilities during subsurface construction activities on the project.

- The survey subcontractor shall determine the most appropriate geophysical technique or combinations of techniques to identify the buried utilities on the project, based on the survey contractor's experience and expertise, types of utilities anticipated to be present, and specific Site conditions.
- The survey contractor shall employ the same geophysical techniques used on the project to identify the buried utilities, to survey the proposed path of subsurface construction work to confirm no buried utilities are present.
- Identify customer specific permit and/or procedural requirements for excavation and drilling activities. For military installations, contact the Base Civil Engineer and obtain the appropriate form to begin the clearance process.

- Contact utility companies or the state/regional utility protection service at least three working days prior to excavation activities to advise of the proposed work, and ask them to establish the location of the utility underground installations prior to the start of actual excavation.
- Schedule the independent survey.
- Obtain utility clearances for subsurface work on both public and private property.
- Clearances are to be in writing, signed by the party conducting the clearance.
- Underground utility locations must be physically verified by hand digging using wood or fiberglass-handled tools when any adjacent subsurface construction activity (e.g., mechanical drilling, excavating) work is expected to come within 5 feet of the marked underground system. If subsurface construction activity is within 5 feet and parallel to a marked existing utility, the utility location must be exposed and verified by hand digging every 100 feet.
- Protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations. If the markings of utility locations are destroyed or removed before excavation commences or is completed, the Project Manager must notify the utility company or utility protection service to inform them that the markings have been destroyed.
- Conduct a Site briefing for employees regarding the hazards associated with working near the utilities and the means by which the operation will maintain a safe working environment. Detail the method used to isolate the utility and the hazards presented by breaching the isolation.
- Monitor for signs of utilities during advancement of intrusive work (e.g., sudden change in advancement of auger or split spoon during drilling or change in color, texture, or density during excavation that could indicate the ground has been previously disturbed).
- In addition to the information contained in this section, personnel performing hand augering operations should use a fiberglass ground probe to search ahead to the next sample interval prior to advancing the hand auger. When performing environmental sampling, decontamination of the fiberglass ground probe shall apply.

When the client or other on-site party is responsible for determining the presence and locations of buried utilities, the AGVIQ-CH2M HILL site supervisor shall confirm the arrangement and be available on-site to verify the location of underground utilities or identified subsurface anomalies that may be in question and require further investigation measures.

9.7.7.2 Unknown or Suspect Objects/Materials

If unknown or suspect objects/materials are encountered (i.e. exposed or partially buried drums, biological waste, cylinders, munitions and explosives of concern, unexpected stained/discolored soil) are encountered during site operations, ongoing activities shall be immediately suspended. AGVIQ-CH2M HILL or subcontractor personnel encountering unknown or suspect objects/materials shall:

- 1) secure the area and identify the location of the object/material to the extent possible, without causing bodily injury to yourself or others and without disturbing the object,

- 2) evacuate the work area,
- 3) immediately notify the project manager of the encountered condition and
- 4) not provide additional disturbance or otherwise handle the suspect object/material.

The site supervisor/FTL or SHSO shall contact the Project Manager and the CIH/HSPAs to evaluate potential hazards associated with the specific situation encountered. The project team will then address the need for the use of special procedures, engineering controls, PPE or specialized subcontract personnel to safely mitigate the situation.

9.7.8 Concrete Work

(Reference CH2M HILL SOP # HSE&Q 302, Concrete & Masonry)

(Reserved)

9.7.9 Confined Space Entry

(Reference CH2M HILL SOP # HSE&Q-203, Confined Space)

(Reserved)

9.7.10 Cranes

(Reference CH2M HILL SOP # HSE&Q-303, Cranes)

(Reserved)

9.7.11 Demolition/Dismantling

(Reference CH2M HILL SOP # HSE&Q-305, Demolition)

(Reserved)

9.7.12 Drilling/Direct Push Technology

(Not Applicable)

9.7.13 Electrical Safety

(Reference CH2M HILL SOP # HSE&Q-206, Electric Safety)

Several types of electrical hazards may be encountered during the execution of the project. These hazards might include, but not be limited to, the general use of generators power cords, and power tools or potentially from inadvertent contact with overhead or subsurface utilities during soil sampling operations. Where the electrical exposure hazards are possible in the work environment, the following standard work practices must be implemented.

- Review and implement all applicable components of CH2M HILL SOP # HSE&Q-206, Electrical Safety, except where other requirements may be more stringent.
- Maintain safe clearance distances between overhead power lines and operating heavy equipment (drill/DPT rigs, heavy earth moving equipment, haul trucks) unless the power lines have been verified as being de-energized and grounded or unless insulating barriers have been installed to prevent physical contact. To determine proper clearance from energized overhead electric lines, consult the reference table below.

Nominal System Voltage (kV)	Minimum Rated Clearance (feet)
0-50	10
51 - 200	15
201 - 300	20
301 – 500	25
501 – 750	35
751 – 1000	45

- Do not swing or position booms/masts of earthmoving equipment toward overhead utilities. Do not allow haul trucks operators to raise dump bed bodies underneath or in close proximity to overhead utilities or pull toward overhead utilities with dump bodies raised. Be cognizant of utility pole guy wires in relation to operating heavy equipment, haul trucks or drill/DPT rigs.
- Do not connect electric sampling or groundwater well purge equipment directly to 12-volt vehicle/tractor/boat batteries as an electrical power source. Use generators and power cords equipped with ground fault circuit interrupters (GFCIs)
- Only qualified personnel (by training, experience, and/or licensure) are permitted to work on electrical systems.
- Do not tamper with or access electrical wiring and equipment unless qualified to do so. All electrical wiring and equipment must be considered energized until hazardous energy control procedures (i.e., lock-out/tag-out) are implemented.
- Inspect electrical equipment, power tools, and extension cords for damage prior to use. Do not use defective electrical equipment and remove from service.
- All temporary wiring, including extension cords and electrical power tools, must have GFCIs installed.
- Extension cords must be:
 - Equipped with third-wire grounding.
 - Covered, elevated, or protected from damage when passing through work areas.
 - Protected from pinching if routed through doorways.
 - Not fastened with staples, hung from nails, or suspended with wire.
- Electrical power tools and equipment must be effectively grounded or double-insulated and Underwriters Laboratory approved.
- Operate and maintain electric power tools and equipment according to manufacturers' instructions.
- Protect all electrical equipment, tools, switches, and outlets from environmental elements.

9.7.14 Excavation Activities

(Reference CH2M HILL SOP # HSE&Q-307, Excavation & Trenching Safety)

All excavation activities executed under this TO will be conducted in accordance with the approved project WP, to which this APP is a component of. Excavation and material handling means and methods detailed in the WP need not be significantly elaborated upon herein.

Mechanical excavation activities of soil from the identified areas are not anticipated to exceed 4' below the existing grade surface. Because of this USACOE EM 385 1-1, section 25 does not apply to this work. These excavation activities will be protected in accordance with an excavation sloping or benching system requirements defined by 29 CFR 1926, subpart P. Relevant requirements of EM 385 1-1, section 25.A.01 "Excavation and trenching Plan" shall be addressed herein.

9.7.14.1 North DRMO Sliver

Soil represented by samples with COC concentrations in excess of the target levels will be removed or covered to prevent potential future exposure to these contaminants. Soil will be removed from two separate impacted areas at the north DRMO sliver. One area is impacted to 6 inches bls (approximately 1,327 square feet [ft²]) and a second area extends to 2 feet bls (approximately 1,301 ft²); however, the upper 6 inches of this area is not impacted in this area and can be reused as backfill. The impacted areas extend to the road to the north and to the Navy fence to the south; the resulting volume of soil contamination is approximately 97 yd³. Confirmation samples will be collected along the northern excavation wall and analyzed for PAHs to assess whether contamination reaches the road.

9.7.14.2 South DRMO Sliver

The vertical extent of COC contamination has been delineated for the south DRMO sliver. Soil exceeded the FDEP Residential SCTLs to a depth of 6 inches in four discrete areas encompassing approximately 1,839 ft² and to a depth of 2 feet bls in six discrete areas encompassing approximately 6,616 ft². Additionally, in order to avoid LUCs on soil greater than 2 feet, one area will be excavated to 4 feet bls near the east end of the south DRMO sliver. Figure 8 depicts this area encompassing approximately 122 ft². The excavation at the south DRMO sliver will extend to the north to the aesthetically pleasing fence; the soil north of the fence currently meets FDEP Residential SCTLs as a result of past DRMO soil removal actions. The excavation proposed in this EE/CA will extend to the south to the former DRMO property line; the resulting volume of contaminated soil for excavation is approximately 533 yd³. Confirmation samples will be collected along the southern excavation wall and analyzed on 24-hour turnaround time for PCBs and PAHs, while lead and arsenic will be collected on a 72-hour turnaround time to assess whether contamination extends to the road. Because of the presence of numerous utilities in the subsurface near the road, the excavation will not extend to the road at this time.

At a minimum, the following procedures must be evaluated and executed as part of proposed site excavation operations.

- Review and implement all applicable components of CH2M HILL SOP # HSE&Q-307, Excavation & Trenching Safety.
- Prior to opening an excavation, underground installations (i.e., utilities, fuel lines) shall be located and protected from damage or displacement. Utility companies (utility owners) and other responsible authorities shall be contacted to locate and mark the

locations and, if they so desire, direct or assist with protecting the underground installations. When required, the AGVIQ-CH2M HILL or designated subcontractor shall obtain a "Dig Permit" or "Excavation Permit" from the NSNR designated point of contact (POC) having jurisdiction prior to initiation of and excavation work. See the "Procedures for Locating Buried Objects/Utilities" contained in this HSP for additional information.

- When personnel will be in or around and excavation, a competent person shall inspect the excavation, adjacent areas, and protective systems daily, as needed throughout the work shifts and after every rainstorm or other hazard-increasing event. If evidence of a situation that could result in possible cave-ins, slides, failure of protective systems, hazardous atmospheres, or other hazardous condition is identified, exposed workers shall be removed from the hazard and all work in the excavation stopped until necessary safety precautions have been implemented. The competent person is also required to monitor and inspect equipment use in water removal operations (i.e. pump systems). Documentation of excavation inspections must be available on site at all times.
- Excavations may not be entered without the presence and approval of an Excavation Competent Person (ECP).

A competent person is defined as:

- An individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has authority to take prompt corrective measures to eliminate them. The competent person should be an individual designated by the employee's respective employer.
- Excavated material shall be placed at least 2 feet. (0.6 meter) from the edge of excavation or greater distance as necessary to prevent excessive loading (and potential collapse) of the excavation face(s).
- Sloping and benching configurations less than 20' in depth shall be in accordance with 29 CFR 1926.652(b) or EM 385 1-1, section 25.C, whichever is more stringent.
- The installed excavation sheeting system shall be in accordance with the project design drawings contained in the Remedial Action Work Plan and the selected excavation sheeting subcontractors final design drawings. These final design sheeting drawings shall be stamped by a registered professional engineer, with jurisdiction or reciprocal jurisdiction in the State of Maine.
- Where the use of support systems, shields or other protective systems is determined to be necessary, the design of said systems shall be in accordance with 29CFR1926.652(c) or shall be in EM 385 1-1, section 25.C, whichever is more stringent.
- Special Excavation Requirements defined by 29CFR1926.651 shall also be evaluated prior to the start of site excavation activities.
- AGVIQ-CH2M HILL personnel must notify and be granted authorization from the excavation-competent person prior to entering any excavation. AGVIQ-CH2M HILL personnel must follow all excavation requirements established by the competent person. A competent person is an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and, who has authority to take prompt corrective

measures to eliminate them. The competent person must be a person designated by the AGVIQ-CH2M HILL.

- The competent person must inspect the excavation every day and after every hazard increasing event. Documentation of this inspection must be available on site at all times.
- Prior to excavating at a location, buried utilities in the area must be identified. Refer to “Procedures for Locating Buried Utilities”, included in this HSP.

AGVIQ-CH2M HILL personnel must not enter any excavation where protective systems are deficient at any time, for any reason. The competent person must be notified of such conditions.

When exploratory excavations are not filled in after their intended use or are left open and/or unattended at any time and assuming that 1) excavations are not exposed to the public, vehicles or equipment and 2) employees are not routinely exposed to (open) excavations and excavations are not greater than 6 feet, then the excavations shall be protected by warning barricades or flagging placed at a distance not closer than 6 feet from the edge of the excavation. Installed warning barricades need to display an adequate warning at an elevation of 3 feet above ground level.

9.7.15 Fall Protection

(Reference CH2M HILL SOP # HSE&Q-310, Fall Protection)

(Reserved)

9.7.16 Fire Prevention

The information provided below is the minimum Fire Prevention procedures that must be engaged for the project site.

- Before conducting any hot work operations, the area shall be surveyed to ensure it is free of the following hazards:
 - Proximate combustible materials,
 - The presence or possible generation of potentially explosive atmospheres (flammable gases, vapors, liquids, or dusts); and
 - The presence or nature of an oxygen-enriched atmosphere.
- All flammable or combustible materials from where welding, cutting or other hot work operations are to occur shall be removed to the extent possible.
- Institute the “Hierarchy of Fire Control”. Objects to be welded, cut, or heated shall be:
 - Moved to a location free of dangerous combustibles;
 - If the work cannot be moved, all moveable fire hazards in the vicinity shall be taken to a safe place (moved at least 35 ft (10.6 m) horizontally from the welding or cutting area) or the combustible material and construction shall be protected from the heat, sparks, and slag of welding;
 - When welding or cutting must be done in a location where combustible or flammable materials are located, inspection and authorization by the government designated authority shall be required before such operations are begun (the location shall be checked for latent fires by qualified fire watch personnel after the work is completed).

- Personnel shall ONLY be allowed to smoke in designated areas, where allowed at all. Designated area must be free of combustible, flammable or potentially explosive materials.
- Flammable/combustible liquids must be kept in approved containers, and must be stored in an approved storage cabinet. Use only metal safety cans for storage and transfer of fuel and use funnels and nozzles during fueling operations.
- Fire extinguishers will be provided so that the travel distance from any work area to the nearest extinguisher is less than 100 feet. When 5 gallons or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet. Extinguishers must:
 - Be maintained in a fully charged and operable condition.
 - Be visually inspected each month.
 - Undergo a maintenance check each year.
 - The area in front of extinguishers must be kept clear.
 - Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher.
 - Fire extinguishers shall be approved by a nationally recognized testing laboratory and labeled to identify the listing and labeling organization and the fire test and performance standard that the fire extinguisher meets or exceeds.
- Combustible materials stored outside should be at least 10 feet from any building.
- Solvent waste and oily rags must be kept in a fire-resistant, properly labeled covered container until removed from the site.
- Personnel shall consider their safety when engaging only incipient stage fires. Fires resulting from residual product in lines or tanks should be handled by Fire and Emergency Services.

9.7.17 Fire Watch

In any instance where flammable or combustible materials have been exposed to fire hazards (such as welding/cutting operations from equipment repair or from unanticipated cutting operations), a fire watch shall be assigned to remain at the location for at least one (1) hour after the exposure has ended. These instances may include, but not be limited to the following;

- Slag, weld splatter, or sparks might pass through an opening and cause a fire.
- Fire-resistant guards or curtains are not used to prevent ignition of combustible materials on or near decks, bulkheads, partitions, or overheads.
- Combustible material closer than 35 feet (10.7 m) to the hot work in either the horizontal or vertical direction cannot be removed, protected with flame-proof covers, or otherwise shielded with metal or fire-resistant guards or curtains.

- The hot work is carried out on or near insulation, combustible coatings, or sandwich-type construction that cannot be shielded, cut back, or removed, or in a space within a sandwich type construction that cannot be inerted.
- Combustible materials adjacent to the opposite sides of bulkheads, decks, overheads, metal partitions, or sandwich-type construction may be ignited by conduction or radiation.
- The hot work is close enough to cause ignition through heat radiation or conduction on the following:
 - Insulated pipes, bulkheads, decks, partitions, or overheads
 - Combustible materials and/or coatings

The work is close enough to unprotected combustible pipe or cable runs to cause ignition.

9.7.18 Flight Line Safety

(Reserved)

9.7.19 General Practices and Housekeeping

Maintaining proper site housekeeping measures promotes the elimination of slip, trip and fall hazards and exhibits a perception of pride in our work product and habits. Poor housekeeping can result in the basis of citations under 29CFR1926.25 (a) or other applicable regulations. Good housekeeping practices must be implemented on every AGVIQ-CH2M HILL controlled project site and at a minimum shall be as follows:

- Maintain good housekeeping at all times in all project work areas.
- During the course of executed project operations, construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
- Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.
- Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers and appropriately labeled. Garbage and other waste shall be disposed of at frequent and regular intervals.
- Establish common paths of travel and keep them free from the accumulation of materials.
- Keep access to aisles, exits, ladders, stairways, scaffolding, and emergency equipment free from obstructions.
- Provide slip-resistant surfaces, ropes, and/or other devices to be used.
- Designate specific areas for the proper storage of materials.
- Store tools, equipment, materials, and supplies in an orderly manner.
- As work progresses, neatly store scrap and unessential materials or remove them from the work area.

- Provide containers for collecting trash and other debris and remove them at regular intervals.
- Clean up all spills quickly. Clean oil and grease from walking and working surfaces.

9.7.20 Hand and Power Tools

(Reference SOP # HSE&Q 210, Hand and Power Tools)

Hand and power tools may be during the support of mobilization operations, the installation of a decontamination pad, or Sampling operations. When the use of hand and power tools is necessary to properly complete assigned tasks, the following work practices must be implemented, where applicable.

- **Review and implement all applicable components of CH2M HILL SOP # HSE&Q 210, Hand and Power Tools except where other requirements may be more stringent.**
- Tools will be inspected prior to use, and damaged tools will be tagged and removed from service.
- Hand tools will be used for their intended use and operated in accordance with manufacturer instructions and design limitations.
- Maintain all hand and power tools in a safe condition.
- Do not set power tools down in muddy or wet areas, which may damage the tool and/or create a potential for electric shock.
- Use PPE (such as gloves, safety glasses, earplugs, and face shields) when exposed to a hazard from a tool.
- Do not carry or lower a power tool by its cord or hose.
- Portable power tools will be plugged into GFCI-protected outlets.
- Portable power tools will be UL listed and have a three-wire grounded plug or be double insulated.
- Disconnect tools from energy sources when they are not in use, before servicing and cleaning them, and when changing accessories (such as blades, bits, and cutters).
- Safety guards on tools must remain installed while the tool is in use and must be promptly replaced after repair or maintenance has been performed.
- Store tools properly in a place where they will not be damaged or come in contact with hazardous materials.
- If a cordless tool is connected to its recharge unit, both pieces of equipment must conform strictly with electrical standards and manufacturer's specifications.
- Tools used in an explosive environment must be rated for work in that environment (that is, intrinsically safe, spark-proof).
- When using a knife or blade tool, stroke or cut away from the body with a smooth motion. Be careful not to use excessive force that could damage the tool, the material being cut or unprotected hands.

Working with manual and pistol-grip hand tools may involve highly repetitive movement, extended elevation, constrained postures, and/or awkward positioning of body members (for example, hand, wrist, arm, shoulder, neck, etc.). Consider alternative tool designs, improved posture, the selection of appropriate materials, changing work organization, and sequencing to prevent muscular, skeletal, repetitive motion, and cumulative trauma stressors.

9.7.20.1 Knife Use

Knives (fixed/utility) shall not be used. If it is demonstrated that a knife is the right tool for the job, this plan will be amended and the activity that knife use will be used for shall be reviewed. An AHA shall also be developed to address hazards and subsequent controls, PPE, and training.

Responsibilities

- Supervisors with assistance from the SSHO are responsible for funding and ensuring the correct tool is being used, employees wear the proper PPE when using knives, and they have reviewed this policy.
- Employees are responsible for having and utilizing the proper PPE while performing an activity requiring the use of a knife. Employees are also responsible for understanding the proper use of a knife.

Glove Requirements

- In general, Kevlar cut resistant gloves are to be worn when using a knife in an occupational setting.
- Other types of gloves may be required and will be identified within the AHA / written procedure. Example - Leather gloves may be worn when using the acetate sleeve cutter.

Standard Control Measures for Knife Use

- All employees that will use a knife must be trained or have experience with the proper use of a knife, prior to using it.
- When using a knife or blade tool, stroke or cut away from the body with a smooth motion. Be careful not to use excessive force that could damage the tool, the material being cut, or unprotected hands.
- When using a knife always cut away from yourself.
- Many tasks using a utility knife require a knife edge but not a sharp point. For these tasks you can add protection against puncture wounds by using a rounded-tip blade.
- If you use a folding knife, it must be a locking blade type.
- Never use a knife that will fold under pressure.
- If you use a fixed blade knife, make sure there is a handle guard to keep your hand from slipping forward. Also, make sure the handle is dry and non- greasy/ slippery to assure a better grip.
- When cutting, make the force of the cut carry the blade away from any part of your body. If you have a peculiar situation where this is not possible, protect yourself with a leather apron, or other material placed between you and the blade. Consider putting the material to be cut in a vise, or other holding device.

- If you carry a fixed blade knife, use a sheath or holder.
- Store utility knives safely, retract the blade or sheath an open blade before storing. Never, leave a knife with the blade exposed on the floor, on a pallet, on a work surface, or in a drawer or cabinet.
- Keep your knife sharp. A dull blade requires you to use more force to cut, and consequently increases the risk of slip or mistake.
- Knives used on the job, but not carried with you, must be properly stored when not in use.
- Never use a defective knife.
- Utility knife blades must be used, recognize that they are brittle and can snap easily. Don't bend them or apply side loads to them by using them to open cans or pry loose objects. Use the knife only to cut. It was not designed to work as a pry bar, screw driver, hole punch, and other assorted things that make it seem so easy.
- **Stay focused on the cutting job.** It only takes a second of inattention with a sharp blade to produce a serious cut. Letting the mind wander or talking with others while using a knife greatly increases the risk of an accident and injury. If you are interrupted while working with a knife, stop cutting, retract the blade, and place the knife down on a secure surface before dealing with the interruption. You should never continue cutting while distracted! As always, utilize the hierarchy of controls and first attempt to engineer out the hazard and frequently ask ourselves do we have the right tool for the job.

9.7.20.2 Examples of Preferred Tools and Kevlar Cut Resistant Gloves





A safety spring provides for automatic blade "shoot-back" into the handle when contact w/cutting surface is lost.

9.7.21 Haul Trucks

It is anticipated that haul trucks will be used for the delivery of products or materials to be incorporated into the project (i.e., drilling supplies, consumables), for the delivery and pick-up of heavy equipment or during the transportation and disposal of generated waste streams. Where haul trucks are used on the project, the following work practices shall be implemented.

- **All haul trucks must following the designated for the project site project.**
- Haul truck operators should be familiar with their equipment and inspect all equipment before use.
- Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn or alarm. All equipment should be equipped with an operational backing alarm.
- Haul trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots.
- Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator.
- If possible, minimize steep grades on haul roads.
- Where grades are steep, provide signs indicating the actual grade as well as measures for a runaway truck.
- Trucks are to be operated within the manufacturer's recommendations (Example: retarder charts indicate the combination of loads, grades, and speeds that should not be exceeded if the truck's retarder is to work properly to ensure the truck does not descend grade at speeds greater than listed).
- Haul roads should be well lit, sufficiently wide (at least 50% of the width of the equipment on both sides of road) and equipped with reflectors to indicate access points.

Haul roads should have adequate right-of-way signs indicating haul directions, where appropriate.

9.7.22 Heavy Equipment

(Reference SOP # HSE&Q 306, Earth Moving Equipment)

Heavy earthmoving equipment (track excavator, front-end load, bulldozer etc.) will be used to complete this TO. When heavy equipment is used on the project, the following work procedures shall be exercised by AGVIQ-CH2M HILL personnel who may be designated to operate or supervise the operation of site heavy equipment.

- AGVIQ-CH2M HILL authorizes only those employees qualified by training or previous experience to operate heavy equipment.
- Equipment must be checked at the beginning of each shift to ensure the equipment is in safe operating condition and free of apparent damage. The check should include service brakes, parking brakes, emergency brakes, tires, horn, back-up alarm, steering mechanism, coupling devices, seat belts, and operating controls. All defects will be corrected before the equipment is placed in service.
 - Documentation of this inspection must be maintained onsite at all times.
 - Refer to the Earthmoving Equipment Inspection Form found in **Attachment 3** of this document.
- Equipment must be on a stable foundation such as solid ground or cribbing; outriggers are to be fully extended.
- Seat belts shall be used by all personnel operating AGVIQ-CH2M HILL equipment.
- Equipment must not be used to lift personnel; loads must not be lifted over the heads of personnel.
- Equipment, or parts thereof, which are suspended must be substantially blocked or cribbed to prevent shifting before personnel are permitted to work under or between them. All controls will be in a neutral position, with the motors stopped and brakes set.
- Equipment that is operating in reverse must have a reverse signal alarm distinguishable from the surrounding noise or a signal person when the operator's view is obstructed.
- When equipment is used near energized power lines, the closest part of the equipment must be at least 10 feet from power lines < 50 kV. Check the electric safety section of this APP for separation distances when working adjacent to overhead energized power lines in excess of 50 kVA person must be designated to observe clearances and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means. All overhead power lines must be considered energized until the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.
- Underground utility lines must be located before excavation begins. See "Procedures for Locating Buried Utilities" contained in this APP for additional information.
- Operators loading/unloading from vehicles are responsible for seeing that vehicle drivers are in the vehicle cab or in a safe area.
- The parking brake will be set whenever equipment is parked; wheels must be chocked when parked on inclines.

- When heavy equipment is not in operation, the blade/bucket must be blocked or grounded; the master clutch must be disengaged when the operator leaves the cab. When equipment is unattended, power must be shut off, brakes set, blades/buckets landed, and shift lever in neutral.

9.7.23 Land Clearing

(Reserved)

9.7.24 Lock-Out/Tag-Out

(Reference SOP # HSE&Q 310, Lock Out Tag Out)

Lockout/Tagout (LO/TO) shall be performed whenever service or maintenance is necessary on equipment that could cause injury to personnel from the unexpected equipment energizing or start-up or unexpected release of stored energy. Energy sources requiring lockout/tagout may include electrical, pneumatic, kinetic, and potential.

If work on energized electrical systems is necessary – contact the HSPAs. Specific training and procedures are required to be followed before any work on energized electrical systems can be performed and are NOT covered in this section. Energized electrical work is defined as work performed **on or near** energized electrical systems or equipment with exposed components operating at 50 volts or greater. Working near energized live parts is any activity inside a Limited Approach Boundary (anywhere from 3.5 feet to 24 feet [1 meter 7.3 meters] depending on voltage). Examples of energized electrical work include using a voltmeter to troubleshoot electrical systems and changing out controllers.

When lockout/tagout is necessary to perform maintenance/repair of a system, all the requirements of SOP HSE-310, Lockout and Tagout, shall be met including the following bulleted items:

- When AGVIQ-CH2M HILL controls the work, AGVIQ-CH2M HILL must verify that subcontractors affected by the unexpected operation of equipment develop a written lockout/tagout program, provide training on lockout/tagout procedures and coordinate its program with other affected subcontractors. This may include compliance with the owner or facility lockout/tagout program.
- When AGVIQ-CH2M HILL personnel are affected by the unexpected operation of equipment they must complete the electrical safety awareness. Authorized personnel shall inform the affected personnel of the LO/TO. Affected personnel shall not tamper with LO/TO devices.
- Standard lockout/tagout procedures include the following six steps: 1) notify all personnel in the affected area of the lockout/tagout, 2) shut down the equipment using normal operating controls, 3) isolate all energy sources, 4) apply individual lock and tag to each energy isolating device, 5) relieve or restrain all potentially hazardous stored or residual energy, and 6) verify that isolation and de-energization of the equipment has been accomplished. Once verified that the equipment is at the zero energy state, work may begin.
- All safe guards must be put back in place, all affected personnel notified that lockout has been removed and controls positioned in the safe mode prior to lockout removal. Only the individual who applied the lock and tag may remove them.
- AGVIQ-CH2M HILL authorized employees shall complete the LO/TO training and either the electrical safety training or 10-hour construction training. The authorized

employee must also be trained and qualified on the system they are working on (e.g., qualified electrician for working on electrical components of a system).

- When equipment-specific LO/TO procedures are not available or when existing procedures are determined to be insufficient, AGVIQ-CH2M HILL authorized employees shall also complete the Equipment-Specific LO/TO Procedure Development Form, provided as an attachment to this APP, to create an equipment-specific lockout/tagout procedure.

9.7.25 Machine Guarding

Machine guarding procedures for the anticipated work will be applicable to power and hand tool use, soil sampling operations, or other certain mechanized equipment that may be used. For these identified activities, the following machine guarding precautions may be applicable to executed work.

- Ensure that all machine guards are in place to prevent contact with drive lines, belts, pinch points, mechanically energized equipment, or any other sources of mechanical injury.
- Unplugging jammed equipment will only be performed when equipment has been shut down, all sources of energy have been isolated, and equipment has been locked/tagged and tested.
- Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work.

9.7.26 Manual Lifting

(Reference SOP # HSE&Q 112, Manual Lifting)

Manual lifting is likely to occur during many phases of the project. Personnel executing assigned tasks where manual lifting is required should use the following procedures to help reduce the potential for personal injury.

- AGVIQ-CH2M HILL personnel should notify supervisors or designated safety representatives of pre-existing medical conditions that may be aggravated or re-injured by lifting activities, such that AGVIQ-CH2M HILL may evaluate safe operational procedures with regard to the required task.
- Proper lifting techniques (use of knees and not back) must be used when lifting any object.
- Plan storage and staging to minimize lifting or carrying distances.
- Use drum dollies/carts with a latching mechanism when handling full/loaded drums. Avoid “chimning” drums wherever possible.
- Split heavy loads into smaller loads.
- Use mechanical lifting aids whenever possible.
- Have someone assist with the lift— especially for heavy (>40 lbs.) or awkward loads. Note: If AGVIQ-CH2M HILL personnel are not capable of lifting 40 lbs., seek assistance from a team member to split the load.
- Make sure the path of travel is clear prior to the lift.

9.7.27 Noise

(Reference SOP # HSE&Q 108, Hearing Conservation Program)

Unprotected exposure to excessive noise levels may lead to gradual and permanent hearing loss. The greater the intensity of a noise and the longer a person is exposed to the noise, the greater the chance of hearing loss. A hearing loss can be permanent or temporary. After certain noise exposures, a person may experience a temporary threshold shift (hearing loss) that results in the inability to hear certain sounds. The ability to hear will usually return. However, repeated or intense noise exposure can prevent this recovery, resulting in permanent hearing loss.

Employee hearing conservation is particularly important for the following site conditions/operations:

- Working around drill/DPT rigs or other heavy equipment with open cabs or with the cab doors open
- Operation of generators
- Working around haul trucks delivering materials
- Operation of pneumatic equipment, rotary or impact hand tools or gas powered hand tools

Each employee is responsible for the following:

- Notify the site supervisor/FTL or SSHO of high-noise-level areas.
- Wear hearing protection when required.
- Complete noise training and audiometric testing (as required).
- Hearing protection is required in work environments exceeding 85 decibels (dB).
- Hearing protection will be worn when operations occur within or adjacent to high-noise sources (i.e. potentially exceeding 85 dB).

9.7.28 Pressure Washing Operations

Pressure washing operations will occur prior to the final demobilization of equipment used at the site and to aid in the cleaning of drill/DPT equipment, which may be contaminated with site COCs. Whenever pressure washing operations are performed at the site, the following procedures must be implemented.

- Rain gear (disposal coated chemical suits for HAZWOPER operations), 16-inch-high, steel-toed rubber boots, safety glasses, hard hat with face shield, and inner and outer nitrile gloves should be worn, at a minimum during pressure washing operations.
- Only trained, authorized personnel may operate the high-pressure washer.
- Rinse waste from pressure washing operations must be collected and properly disposed.
- Follow manufacturer's safety and operating instructions.
- Inspect pressure washer before use and confirm dead man switch fully operational.
- The wand must always be pointed at the work area.
- The trigger should never be tied down

- Never point the wand at yourself or another worker.
- The wand must be at least 42 inches from the trigger to the tip.
- The operator must maintain good footing.
- Non-operators must remain a safe distance from the operator.
- No unauthorized attachment may be made to the unit.
- Do not modify the wand.
- All leaking or malfunctioning equipment must be repaired immediately or the unit taken out-of-service.

9.7.29 Sample Handling

Sample handling, packaging, and preservation will primarily be conducted soil sampling and Investigation Derived Waste (IDW) management. Proper work practices and procedures to be followed during these activities include:

- Skin contact with water, soil, sediment or debris of undetermined chemical characterization shall be avoided at all times.
- PPE and Air Monitoring requirements shall be executed in accordance with in accordance with Sections 9.33.8 of this APP to minimize potential dermal and respiratory exposures to identified site contaminants of concern while conducting sample collection or characterization of potentially contaminated media (soil, water, drilling fluids/cuttings, PPE, soil vapor, etc.). In addition, good personal hygiene practices and procedures must be maintained (see Section 9.33.11 of this APP).
- Caution should be exercised when filling bottles containing acid or base preservatives. Both liquid and vapor phases of acid can cause severe burns.
- Following sample collection, sample container lids should be tightened securely to prevent any leaks, and the containers should be rinsed with clean water to ensure that they are free of chemical constituents. Sample activities, sample collection, and equipment decontamination procedures.
- Follow sampling procedures detailed in the Work Plan/SAP.

9.7.29.1 Sampling and Handling of Generated Waste Materials

During the execution of the contract, various types and quantities of waste may be generated. This may include the pre-characterization of waste soil, or the characterization of generated spent PPE or decontamination fluids. Personnel are permitted to handle and/or sample drums containing known sources of drummed waste only as handling or sampling other drums (unknowns) requires a plan revision or amendment approved by the AGVIQ-CH2M HILL Program CIH or safety professional. The following control measures will be taken when managing drums containing generated waste materials:

- Minimize transportation of drums or other containers with generated waste.
- Sample only labeled drums or drums known to contain generated waste. Unknown drums or drums that show evidence of excessive buckling/bulging, corrosion, vapors, crystallization, unusual discoloration or other abnormalities may not be sampled without the evaluation of engineering controls, proper PPE air monitoring equipment, and the use of properly trained personnel familiar with the sampling of unknown drum contents.

- Follow sampling procedures detailed in the Work Plan.
- Use caution when sampling bulging or swollen drums. Relieve pressure slowly and step away from the drum as pressure is being released.
- If drums contain, or potentially contain, flammable materials, use non-sparking (i.e., brass) tools to open the drum.
- Picks, chisels, and firearms may not be used to open drums.
- Reseal bung holes or plugs whenever possible.
- Avoid mixing incompatible drum contents.
- Sample drums without leaning over the drum opening.
- Transfer the content of drums using a method that minimizes contact with material.
- PPE and Air Monitoring requirements shall be executed in accordance with Sections 9.33.8, of this APP in an effort to minimize potential dermal and respiratory exposures to identified site contaminants of concern. In addition, good personal hygiene practices and procedures must be maintained (see Section 9.33.11 of this APP).
- Spill-containment procedures specified in Section 9.2.5 must be appropriate for the material to be handled.

9.7.30 Slips, Trips, and Falls

Slip, trip, and fall hazards exist in virtually ALL work environments. Even though slip, trip, and fall hazards are typically thought of as posing low risk to workers, they account for a large percentage of worker injuries. As such, workers should exercise caution about becoming complacent to recognizing and removing slip, trip and fall hazard from designated work areas. To eliminate slip, trip and fall hazards from the work place the following should be implemented.

- Walk or climb only on equipment and/or surfaces designed for personnel access.
- Maintain three (3) points of contact when entering or exiting heavy equipment or when climbing or working from ladders.
- Observe and avoid areas of unprotected holes, ramps, and ground penetrations or protrusions (stumps, roots, holes curbs, utility structures etc). If these conditions cannot be corrected, mark these hazards (i.e. high visibility paint, traffic cones etc) so that workers may recognize and avoid them.
- Employees walking in ditches, uneven surfaces, swales and other drainage structures adjacent to roads, across undeveloped land or in controlled industrial work/process areas must use caution to prevent slips and falls, which can result in twisted or sprained ankles, knees, and backs.
- Whenever possible work from areas which have flat, stable surfaces and do not enter steep sided ditches/excavations.
- Sturdy, hard toe boots that provide sufficient ankle support shall be used on AGVIQ-CH2M HILL project site.

9.7.31 Stairways and Ladders

(Reference SOP # HSE&Q 214, Stairways and Ladders)

(Reserved)

9.7.32 Munitions and Explosives of Concern

(Reference SOP # HSE&Q 610, Explosives Usage and Munitions Response)

(Reserved)

9.7.33 Vacuum Truck Operations

(Reserved)

9.7.34 Vehicular Traffic (Exposure to)

(Reference SOP # HSE&Q 216, Traffic Control)

The following standard work practices must be exercised when personnel are working in or around haul truck routes or near an area where traffic controls have been established.

- When parking your vehicle, park in a manner that will allow for safe exit from vehicle, and where practicable, park vehicle so it can serve as a barrier.
- Shut off and secure Site vehicles prior to exiting them. Park on level ground where possible. If parking on an incline, engage parking brake. If the vehicle has a manual transmission, ensure the transmission is in gear (not neutral) and the parking brake is engaged before exiting the vehicle.
- Exercise caution when exiting traveled way or parking along street – avoid sudden stops, use flashers, etc.
- All staff working adjacent to traveled way or within work area must wear reflective/high-visibility safety vests.
- Eye protection should be worn to protect from flying debris.
- Remain aware of factors that influence traffic-related hazards and required controls – sun glare, rain, wind, limited sight-distance, hills etc.
- Always remain aware of an escape route, such as behind an established barrier or parked vehicle.
- Always pay attention to moving traffic – never assume drivers are looking out for you.
- Work as far from traveled way as possible to avoid creating confusion for drivers.
- When workers must face away from a haul truck to perform assigned duties, a “buddy system” should be used, where one worker is looking toward traffic.
- Work area should be protected by a physical barrier.
- Lookouts should be used when physical barriers are not available or practical.

In addition to the above work practices, AGVIQ-CH2M HILL personnel and AGVIQ-CH2M HILL subcontractors shall adhere to the following procedures while operating motor vehicles or other motorized equipment on military/government facilities.

- Always use a seat belt while driving on military/government controlled facilities

- Always observe posted speed limits, traffic signs and signals
- Never use a cell phone or two-way radio while driving on military/ government controlled facilities

Violating these requirements may result in loss of military/ government facility driving privileges.

9.7.35 Visible Lighting

Site work should be performed during daylight hours whenever possible. Work conducted during hours of darkness (including dusk and dawn) requires the set-up of supplemental lighting equipment. (Note: A general “rule of thumb” is that the illumination intensity must be sufficient to read a newspaper without difficulty). The chart below provides a reference for illumination requirements for various construction related work environments.

Illumination (Foot Candles)	Illumination (Lux)	Area of Operation
5	~ 55	General construction area lighting
3	~ 33	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	~ 55	Indoors: warehouses, corridors, hallways, and exit ways
5	~ 55	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved caplights shall be acceptable for use in the tunnel heading)
10	~ 108	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active store rooms, mess halls and indoor toilets and workrooms.)
30	~ 323	First aid stations, infirmaries, and offices

Notes:

A **foot candle** is a unit of illumination on a surface that is everywhere one foot from a point source of one candle.

A **lux** is a unit of measurement of the intensity of light. It is equal to the illumination of a surface one meter away from a single candle.

CONVERSIONS

Foot Candles (FC) = Lux x .0929

Lux = Foot candles x 10.76 - (i.e.: 50 FC = 538 LUX)

The following safe work practices shall be considered with regard to lighting in the workplace.

- Do not enter poorly lit areas without first providing portable illumination.
- Do not use non-explosion proof lighting in areas of flammable or combustible gases or liquids.

9.7.36 Welding or Cutting Operations

(Reference SOP # HSE&Q 314, Welding & Cutting)

(Reserved)

9.7.37 Working Alone

(Reserved)

9.7.38 Working Around Material Handling Equipment

(Reserved)

9.7.39 Working on or Over Water

(Reserved)

9.8 Hazard Communication Program

A hard copy of the AGVIQ, LLC, and CH2M HILL, Inc. Hazard Communication program information and MSDS material shall be provided at the project site.

In general, the SSHO will be the main contact in any onsite emergency coordination or communication situation and will ensure offsite emergency agencies have been contacted prior to the start of and verify that emergency contact numbers contained in this APP are accurate/operational work. The SSHO will communicate with all potential emergency response organizations that would respond to an on-site emergency condition. In the event that during an emergency situation, the primary SSHO is not available or not capable of performing this function, an alternate SSHO or Site supervisor/FTL can fulfill these duties. The SSHO or designee will serve as the Hazard Communication Coordinator (SSHO), and will perform the following:

- Review the COCs and other applicable hazard communication information contained this APP.
- Request or confirm locations of MSDSs from the client, contractors, and subcontractors or material vendors for chemicals to which AGVIQ-CH2M HILL employees are potentially exposed. Maintain MSDSs in this APP (**Attachment 5**).
- Complete an inventory of chemicals brought onsite. See **Attachment 6** of this APP. Give employees required chemical-specific HAZCOM training information using the format included in **Attachment 6** of this APP.
- Confirm that an inventory of chemicals brought onsite is available.
- Prior to, or as chemicals arrive onsite, obtain an MSDS for each hazardous chemical.
- Label chemical containers with the identity of the chemical and with hazard warnings, and store properly.
- Store all materials properly, giving consideration to compatibility, quantity limits, secondary containment, fire prevention, and environmental conditions.

9.8.1 Shipping and Transportation of Chemical Products

Chemicals brought to the site might be defined as hazardous materials by the U.S. DOT. All staff who ship the materials or transport them by road must receive training in shipping dangerous goods. All hazardous materials that are shipped (e.g., via Federal Express) or are

transported by road must be properly identified, labeled, packed, and documented by trained staff. Contact the AGVIQ-CH2M HILL Project Manager and program regulatory specialist for additional information.

9.9 Process Safety Management

(Reserved)

9.10 Lead Abatement Plan

A lead hazard evaluation has been performed for the site and the maximum levels of lead to be encountered at the site are not anticipated to have the potential to cause a lead exposure above the OSHA action level of 30 $\mu\text{g}/\text{m}^3$. The type of work being performed does not fall into the category of lead abatement and therefore the requirements of EM 385 1-1, section 06.B.05 are not applicable to this TO.

9.11 Asbestos Abatement Plan

(Reserved)

9.12 Radiation Safety Program

(Reserved)

9.13 Abrasive Blasting

(Reserved)

9.14 Heat/Cold Stress Monitoring Program

9.14.1 Heat Stress Monitoring and Prevention

It is not anticipated that that this TO will be executed during periods where high ambient air temperature conditions will persist. However, if project schedule changes, the following information is provided as procedural information to monitor and prevent heat related injuries to site workers, especially those who may be required to wear impervious chemically protective personal protective equipment.

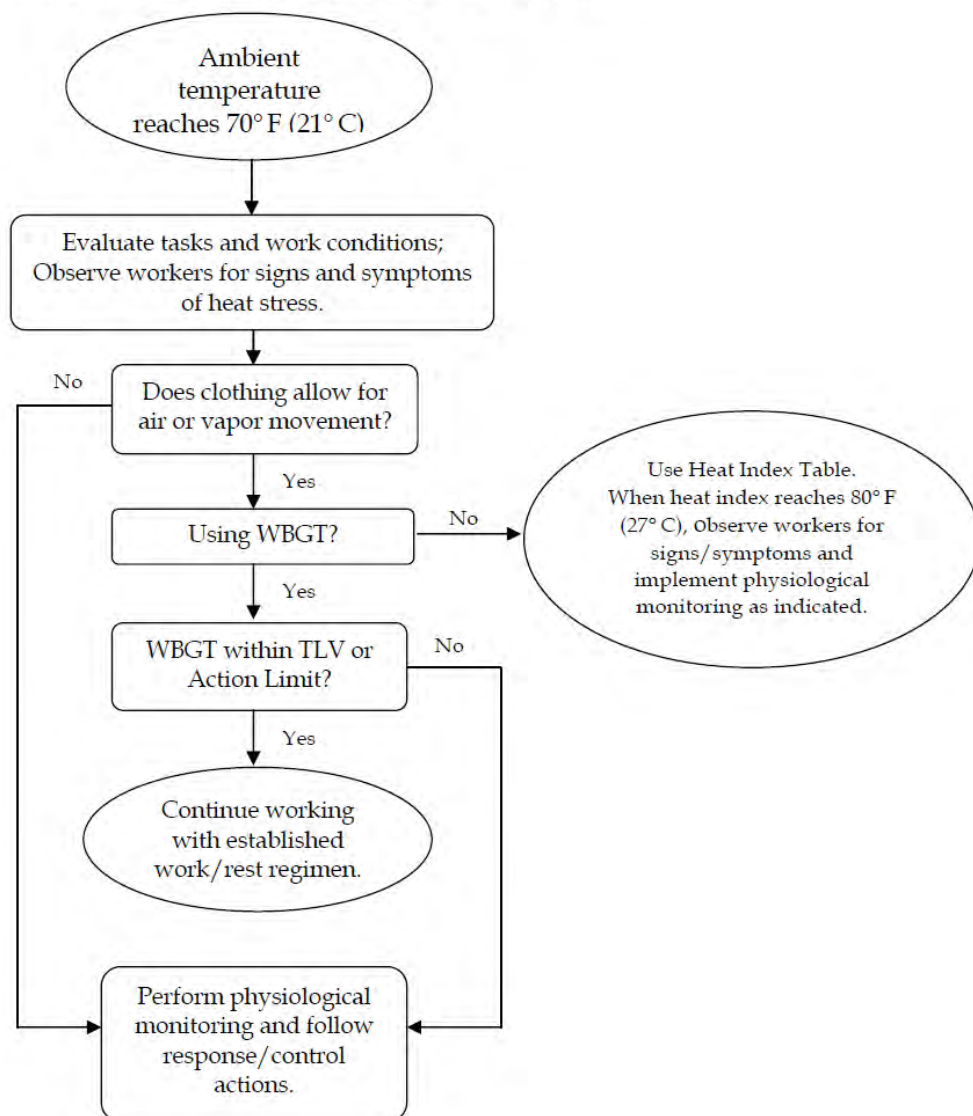
- It is recommended that personnel drink 16 ounces of water before beginning work. Disposable cups or containers and water maintained at 50°F to 60°F shall be available. Under severe conditions, drink 1 to 2 cups every 20 minutes, for a total of 1 to 2 gallons per day. Do not use alcohol in place of water or other nonalcoholic fluids. Decrease your intake of coffee and caffeinated soft drinks during working hours.
- Acclimate yourself by slowly increasing workloads (e.g., do not begin with extremely demanding activities).
- Use cooling devices, such as cooling vests, to aid natural body ventilation. These devices add weight, so their use should be balanced against efficiency.
- Use mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.
- Conduct field activities in the early morning or evening and rotate shifts of workers, if possible.

- Whenever possible, avoid direct sun, which can decrease physical efficiency and increase the probability of heat stress. Take regular breaks in a cool, shaded area. Use a wide-brim hat or an umbrella when working under direct sun for extended periods.
- Provide adequate shelter/shade to protect personnel against radiant heat (sun, flames, hot metal).
- Maintain good hygiene standards by frequently changing clothing and showering.
- Observe one another for signs of heat stress. Persons who experience signs of heat syncope, heat rash, or heat cramps should consult the SSHO to avoid progression of heat-related illness.
- **To counteract the onset of heat stress symptoms, a work-break regimen must be established during the executed work. Workers in Modified Level D or Level C PPE shall be allowed to rest and lower core body temperature to normal status when any one condition is exceeded:**
 - Visual signs and symptoms of heat stress are present in a worker.
 - It is determined that a worker's core body temperature exceeds 100.4 degrees F.
 - Active work duration in Modified Level D or Level C PPE in ambient temperatures in excess of 70 degrees F (without regard to humidity evaluation) occurs for more than 45minutes.
 - Personnel reactions, physical conditions or extreme atmospheric conditions warrant.
- For employees in permeable work clothing, Wet Bulb Globe Temperature (WBGT) Index or physiological monitoring shall be conducted and work/rest regimens established.

SYMPTOMS AND TREATMENT OF HEAT STRESS					
<i>Signs and Symptoms</i>	Heat Syncope	Heat Rash	Heat Cramps	Heat Exhaustion	Heat Stroke
	Sluggishness or fainting while standing erect or immobile in heat.	Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure.	Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours.	Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid steady pulse and low blood pressure; oral temperature normal or low	Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature (104F or above).
<i>Treatment</i>	Remove to cooler area. Remove outer impermeable protective clothing. Rest victim lying down in supine position (on back, facing up) with head shoulders slightly elevated. Increase fluid intake. Recovery usually is prompt and complete. Where effected person is conscious, have them loosen their clothing to promote cooling surface between clothing/body.	Remove to cooler area. Remove outer impermeable protective clothing. Remove to cooler area. Remove outer impermeable protective clothing. Rest victim lying down in supine position (on back, facing up) with head shoulders slightly elevated.. Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection. Where effected person is conscious, have them loosen their clothing to promote cooling surface between clothing/body.	Remove to cooler area. Remove outer impermeable protective Rest victim lying down in supine position (on back, facing up) with head shoulders slightly elevated. Increase fluid intake. Where effected person is conscious, have them loosen their clothing to promote cooling surface between clothing/body.	Remove to cooler area. Rest victim lying down in supine position (on back, facing up) with head shoulders slightly elevated. Administer fluids by mouth. Seek medical attention immediately. Where effected person is conscious, have them loosen their clothing to promote cooling surface between clothing/body.	Remove to cooler area. Rest victim lying down in supine position (on back, facing up) with head shoulders slightly elevated. Where effected person is conscious, have them loosen their clothing to promote cooling surface between clothing/body. Call ambulance, and <u>get medical attention immediately!</u> Provide sips of cool water to if fully conscious and not nauseous or vomiting. Cool rapidly by soaking clothing in cool—but not cold—water. This procedure shall only be performed where directed by someone with medical training/licensure (i.e. EMT, physician) and only as a life saving precaution. Evaluate employee's condition by an occupational physician prior to resuming normal assigned duties.

9.14.2 Thermal Stress Monitoring

Thermal Stress Monitoring Flow Chart



Thermal Stress Monitoring – Permeable or Impermeable Clothing

When permeable work clothes are worn (street clothes or clothing ensembles over street clothes), regularly observe workers for signs and symptoms of heat stress and implement physiological monitoring as indicated below. This should start when the heat index reaches 80° F (27° C) [see Heat Index Table below], or sooner if workers exhibit symptoms of heat stress indicated in the table above. These heat index values were devised for shady, light wind conditions; exposure to full sunshine can increase the values by up to 15°F (8°C). Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

When wearing **impermeable clothing** (e.g., clothing doesn't allow for air or water vapor movement such as Tyvek), physiological monitoring as described below shall be conducted when the ambient temperature reaches 70° F (21° C) or at a lower temperature when workers begin to exhibit signs and symptoms of heat stress.

Heat Index	Possible Heat Disorders	Minimum Frequency of Physiological Monitoring
80°F - 90°F (27°C - 32°C)	Fatigue possible with prolonged exposure and/or physical activity	Observe Workers for signs of heat stress and implement physiological monitoring if warranted.
90°F - 105°F (32°C - 41°C)	Sunstroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity	Every 2 hours, or sooner, if signs of heat stress are observed.
105°F - 130°F (41°C - 54°C)	Sunstroke, heat cramps, or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.	Every 60 minutes or sooner if signs of heat stress are observed.
130°F or Higher (54°C or Higher)	Heat/Sunstroke highly likely with continued exposure.	Every 30 minutes or sooner if signs of heat stress are observed.
Source: National Weather Service		

Procedures for when Heat Illness Symptoms are Experienced

Always contact the RHSM when any heat illness related symptom is experienced so that controls can be evaluated and modified, if needed.

In the case of cramps, reduce activity, increase fluid intake, move to shade until recovered.

In the case of all other heat-related symptoms (fainting, heat rash, heat exhaustion), and if the worker is a CH2M HILL worker, contact the occupational physician at 1-866-893-2514 and immediate supervisor.

In the case of heat stroke symptoms, call 911, have a designee give location and directions to ambulance service if needed, follow precautions under the emergency medical treatment of this HSP.

Follow the Incident Notification, Reporting, and Investigation section of this HSP.

9.14.3 Cold Stress Monitoring and Prevention

(Reserved)

9.15 Crystalline Silica Monitoring Plan

(Reserved)

9.16 Night Operations Lighting Plan

(Reserved)

9.17 Fire Prevention Plan

Fire prevention shall be conducted in accordance with the information identified in **section 9.7.16** of the APP, Health and Safety Hazard Control Program - Fire Prevention.

9.18 Wild Land Fire Management Plan

(Reserved)

9.19 Hazardous Energy Control Plan

(Reserved)

9.20 Critical Lift Plan

(Reserved)

9.21 Contingency for Severe Weather Plan

See **Section 9.7.2** Health and Safety Hazard Control Program - “Adverse Weather”.

9.22 Float Plan

(Reserved)

9.23 Site Specific Fall Protection and Prevention Plan

(Reserved)

9.24 Demolition Plan

(Reserved)

9.25 Excavation/Trenching Plan

The excavation and trenching plan associated with the execution of this task order is detailed in section 9.7.14 of this APP and need not be further elaborated upon in this section.

9.26 Emergency Rescue (Tunneling)

(Reserved)

9.27 Underground Construction Fire Prevention and Protection Plan

(Reserved)

9.28 Compressed Air Plan

(Reserved)

9.29 Formwork Shoring and Removal Plan

(Reserved)

9.30 Precast Concrete Plan

(Reserved)

9.31 Lift Slab Plans

(Reserved)

9.32 Steel Erection Plans

(Reserved)

9.33 Site Safety and Health Plan

9.33.1 Occupational Safety and Health Hazards with Site Clean-up

Several occupational physical and chemical hazards are associated with the execution of this TO as follows:

- Physical hazards associated with excavation equipment or encountering or damaging buried utilities during excavation operations;
- Dermal exposure to, or incidental ingestion of, disturbed soil, sediment or water impacted by site COCs;
- Inhalation of site COCs disturbed or brought to the surface by subsurface drilling activities.

Control measures to mitigate such hazards are presented throughout this APP in sections 4.0 through 10.0.

9.33.2 Site Description and Contamination Characterization

A site description for NAS Key West is provided in section 2.0 “Background Information” of this APP and will not be further elaborated upon in this section. Summarized site contamination characterization data is provided by the list of site COCs provided in Table 9-1.

Table 9-1 Site COCs

Contaminant	Location & Max.^a Concentration	Exposure Limit^b	IDLH^c	Symptoms and Effects of Exposure	PIP^d (eV)
Arsenic	GW: SB: SS: 4.7 mg/kg	0.01 mg/m ³	5 Ca	Ulceration of nasal septum, respiratory irritation, dermatitis, gastrointestinal disturbances, peripheral neuropathy, hyperpigmentation	UK
Lead	GW: SB: SS: 3900 mg/kg	0.05 mg/m ³	100	Weakness lassitude, facial pallor, pal eye, weight loss, malnutrition, abdominal pain, constipation, anemia, gingival lead line, tremors, paralysis of wrist and ankles, encephalopathy, kidney disease, irritated eyes, hypertension	UK
PCBs (Limits as Aroclor 1254)	GW: SB: 3.7 mg/kg SS: 37 mg/kg	0.5 mg/m ³	5 Ca	Eye and skin irritation, acne-form dermatitis, liver damage, reproductive effects	UK
PNAs (Limits as Coal Tar Pitch)	GW: SB: 26.96 mg/kg SS: 0.983 mg/kg	0.2 mg/m ³	80 Ca	Dermatitis and bronchitis	UK

Footnotes:

* Results are in milligram per kilogram (mg/kg) unless otherwise specified.

^a Specify sample-designation and media: SB (Soil Boring), A (Air), D (Drums), GW (Groundwater), L (Lagoon), TK (Tank), S (Surface Soil), SL (Sludge), SW (Surface Water).

^b Appropriate value of Permissible Exposure Limit (PEL, OSHA), Recommended Exposure Limit (REL, National Institute for Occupational Safety and Health [NIOSH]), or TLV listed. C = Ceiling value (NIOSH), Ca = A substance NIOSH considers to be a potential occupational carcinogen

^c IDLH = immediately dangerous to life and health (units are the same as specified "Exposure Limit" units for that contaminant); NL = No limit found in reference materials; CA = Potential occupational carcinogen.

^d PIP = photoionization potential; NA = Not applicable; UK = Unknown.

9.33.2.1 Radiological or Nuclear Hazards and Controls

Hazards	Controls
Not Applicable	Not Applicable

9.33.2.2 Potential Routes of COC Exposure

Dermal: Contact with contaminated media (soil, used PPE or heavy equipment impacted by COCs). This route of exposure is minimized through proper use of PPE, as specified in section 9.33.8

Inhalation: Air Borne particulates impacted by COCs. This route of exposure is minimized through proper dust control, respiratory protection and air monitoring, as specified in section 9.33.8.

Other:

Inadvertent ingestion of contaminated media: This route should not present a concern if good hygiene practices are followed (e.g., wash hands/face before eating, drinking, or smoking).

Inadvertent injection of contaminated media: This route should not present a concern unless a puncture of contaminated PPE were to occur, which resulted in breaking the employees skin and the resulting wound was impacted by contaminated media.

9.33.3 Lead Exposure Information

The following information provides worker awareness information with regard to OSHA regulations regarding exposure to lead containing materials due to the presence of lead in the site soil.

- AGVIQ-CH2M HILL or subcontractor site personnel who may be covered by this APP shall have participated in or received Lead Awareness Training, prior to engaging in soil disturbing operations anticipated for this TO that covers the uses, occurrence, and physical and toxic characteristics of lead.
- Where total particulate concentrations in the worker breathing zone or at the fence line perimeter remain elevated or frequently fluctuate above the action levels in Table 9-3 "Air Monitoring Requirements" of this APP and cannot be controlled by standard dust suppression measures, then use of additional and appropriate engineering or administrative controls or a PPE upgrade must be evaluated by the Program CIH, Project Manager and Client before work may proceed.
- Work activities involving the investigation of lead contaminated soils should be treated as having a potential for lead exposure.

- Do not enter controlled work areas unless training, medical monitoring, and PPE requirements established by this HSP have been met.
- Do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.
- Do not launder designated work clothes with ordinary clothes.
- Respiratory protection and other exposure controls selection shall be based on the most recent exposure monitoring results or sampling data associated with the work area.

9.33.3.1 Applicable Lead Regulations (OSHA)

Inorganic lead has been specifically regulated in general industry by OSHA since 1981 (29 CFR 1910.1025) and in construction (29 CFR 1926.62) since 1994. The 8-hour permissible exposure limit is 50 µg/M3. There is no short term exposure limit. OSHA also specifies an action level of 30 µg/M3. These limits apply to both general industry and construction. Initial air monitoring must be done whenever there are indications of lead exposure above the action level. If the action level is not exceeded, air monitoring can cease. If the action level is exceeded, initial blood lead level monitoring must be made available. If exposed above the action level for more than 30 days in a year, medical surveillance must be provided which includes further blood lead level monitoring and a medical examination. If specified blood levels are exceeded, the employee must be removed from the job or task where lead exposure occurs. Training must also be provided. If the permissible exposure level (PEL) is exceeded, engineering controls must be implemented to reduce exposure. If engineering controls are not feasible or ineffective, respirators must be provided and worn.

9.33.3.2 Lead Exposure Compliance

Previous investigations at the adjacent former DRMO site that this projects “Land Slivers” were a part of, indicate potential total lead concentration up to 3,900 mg/kg.

However, because the assigned work is being performed with minimally intrusive techniques, in an open air well ventilated environment, and engineering controls of dust suppression (water application), it is anticipated that the exposure to airborne lead contaminated particulate by site workers and off-site receptors is low to negligible. Because of the combination of these factors, it is not anticipated that site personnel or off-site receptors will be exposed to identified site COCs in excess of established OELs during the execution of this TO. This assumption is additionally supported by the use of exposure modeling using worst case conditions.

Based on the this information, it is our opinion that the intent of the requirements defined by 29CFR1910.1025(d)(1)/29CFR1926.62(d) (1) is not applicable, for the assigned scope of work, under this TO. It is not anticipated that an exposure to lead in excess of the OSHA AL/PEL would reasonable occur during the execution of this TO.

9.33.4 Hazard/Risk Analysis

Hazard/Risk Analysis for this project is provided in section 10.6 “Project Specific Activity Hazard Analyses” and will not be elaborated upon further in this section.

9.33.5 Staff Organization, Qualifications, and Responsibilities

Staff organization, qualifications and responsibilities is identified in section 4.0 “Responsibilities and Lines of Authority” and section 6.0 “Training” of this APP and will not be elaborated upon further in this section.

9.33.6 General and Project-Specific Training

General and project specific training is identified in section 6.0 “Training” of this APP and will not be elaborated upon further in this section.

9.33.7 Medical Surveillance

Site worker medical surveillance requirements is identified in section 6.0 “Training” of this APP and will not be further elaborated upon in this section.

9.33.8 Personal Protective Equipment

(Reference CH2M HILL- SOP HSE-117, *Personal Protective Equipment*)

Where site workers are engaged in the DPT drilling, handling of soil, liquid, or dust particles impacted by Site COCs the use of worker PPE in addition to the other hazard control measures presented in this APP is required for the duration of the task (see task schedule in Work Plan). The proper use of PPE is essential to ensure personnel safety. All site workers will be trained on the proper fitting, use, donning and doffing procedures, limits of use, and inspection, maintenance, cleaning, and storage requirements. The SSHO shall perform an inspection of the use of PPE using the checklist provided in Attachment 3 to ensure the continued effectiveness of this program.

- PPE must be worn by employees when actual or potential hazards exist and engineering controls or administrative practices cannot adequately control those hazards.
- A PPE assessment has been conducted by the HSPAs based on project tasks (see PPE specifications below). Verification and certification of assigned PPE by task is completed by the HSPAs or designee.
- Decontamination of PPE will take place in accordance with Section 9.33.11.
- The use of PPE adds physical stress (heat/cold stress) to the wearer. Follow procedures in Section 9.14 to reduce these hazards.
- Employees must be trained to properly wear and maintain the PPE.
- In work areas where actual or potential hazards are present at any time, PPE must be worn by employees working or walking through the area.
- Areas requiring PPE should be posted or employees must be informed of the requirements in an equivalent manner.
- PPE must be inspected prior to use and after any occurrence to identify any deterioration or damage.
- PPE must be maintained in a clean and reliable condition.
- Damaged PPE shall not be used and must either be repaired or discarded.
- PPE shall not be modified, tampered with, or repaired beyond routine maintenance.
- If a task other than the tasks described in this table needs to be performed, contact the HSPA so this table can be updated.

The requirements for the use of PPE and worker exposure monitoring and air sampling in connection with the execution of identified project DFOWs are provided in Table 9-33-1 below.

TABLE 9-2: PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS^A

Task	Level	Body	Head	Respirator ^b
<ul style="list-style-type: none">• Mobilization and site preparation outside of potentially contaminated areas<ul style="list-style-type: none">— Erosion/Storm water controls installation— Utility clearance/locate and land survey operations— Decontamination pad installation• Backfill and Site Restoration• Demobilization	D	<ul style="list-style-type: none">• Designated and appropriate work clothes• Steel toe work boots that provide sufficient ankle support• Work gloves (cut resistant)• Reflective traffic vest	<ul style="list-style-type: none">• Hardhat ^c• Safety glasses• Hearing protection (as applicable) ^d	None required
<p>Any function identified in this APP where potential dermal contact with site COCs is <u>limited to the hands only</u>.</p> <ul style="list-style-type: none">• Mobilization and site preparation<ul style="list-style-type: none">— Erosion/Storm water controls installation— Utility clearance/locate and land survey operations— Decontamination pad installation• Excavation in impacted surface and subsurface soil<ul style="list-style-type: none">— Mechanical Soil Excavation— Containerization, Transport, and Disposal of waste• Soil Sampling<ul style="list-style-type: none">— Pre-excavation in situ waste characterization and backfill sampling— Post excavation confirmation sampling• Decontamination and Demobilization.	Modified D1	<ul style="list-style-type: none">• Designated and appropriate work clothes;• Steel toe work boots that provide sufficient ankle support (preferable leather)• Work gloves (cut resistant)• Reflective safety vest;• Inner surgical-style nitrile and outer chemical resistant nitrile gloves.	<ul style="list-style-type: none">• Hardhat ^c• Safety glasses• Ear protection (as applicable) ^d• Face shields (as applicable)	None required.
<p>Any function identified in this APP where potential dermal contact with site COCs is NOT limited to the hands only.</p> <ul style="list-style-type: none">• Mobilization and site preparation<ul style="list-style-type: none">— Erosion/Storm water controls installation— Utility clearance/locate and land survey operations— Decontamination pad installation• Excavation in impacted surface and subsurface soil<ul style="list-style-type: none">— Mechanical Soil Excavation— Containerization, Transport, and Disposal of waste• Soil Sampling<ul style="list-style-type: none">— Pre-excavation in situ waste characterization and backfill sampling— Post excavation confirmation sampling• Decontamination and Demobilization.	Modified D2	<ul style="list-style-type: none">• Coveralls: Poly coated or uncoated light weight Tyvek® chemical resistant disposable coveralls. Poly coated will be used for pressure washing operations.• Boots: Hard toe work boots that provide sufficient ankle support (preferable leather); with outer rubber boot covers or hard toe chemically resistant rubber boots with steel shank• Gloves: Inner and Outer surgical-style nitrile chemical-resistant nitrile gloves.	<ul style="list-style-type: none">• Hardhat ^c▪ Safety glasses▪ Ear protection (as applicable) ^d▪ Face shields and goggles (as applicable, required for pressure washing operations)	None required.
<p>Contact HSPA/CIH prior to implementing Level C PPE upgrade.</p> <ul style="list-style-type: none">• Site conditions where defined action levels are exceeded or where unknown site conditions are encountered and confirmed by AGVIQ-CH2M HILL HSPA/CIH that Level C PPE is required to ensure a negative exposure to site COCs by site workers. If concentrations are sustained, remain elevated or frequently fluctuate above the action levels in the worker breathing zone then use of additional and appropriate engineering or administrative controls or a PPE upgrade must be evaluated by the Program CIH, Project Manager and Client before work may proceed.	C	<ul style="list-style-type: none">• Coveralls: Polycoated Tyvek®• Boots: Steel-toe, chemical-resistant boots OR steel-toe, leather work boots with outer rubber boot covers• Gloves: Inner surgical-style nitrile and outer chemical resistant nitrile gloves.	<ul style="list-style-type: none">• Hardhat ^c▪ Ear protection (as applicable) ^d▪ Spectacle inserts (as applicable)	APR, full face, MSA Ultratwin or Equivalent with GME P100 Cartridges.

Reasons for Upgrading or Downgrading Level of Protection	
Upgrade ^f	Downgrade
<ul style="list-style-type: none">Request from individual performing tasks.Change in work tasks that will increase contact or potential contact with hazardous materialOccurrence or likely occurrence of gas or vapor emission.Known or suspected presence of dermal hazards.Instrument action levels exceeded (when implemented).	<ul style="list-style-type: none">New information indicating that situation is less hazardous than originally thought.Change in site conditions that decrease the hazard.Change in work task that will reduce contact with hazardous materials.

^a Modifications are as indicated. AGVIQ-CH2M HILL will provide PPE only to AGVIQ-CH2M HILL employees.

^b No facial hair that would interfere with respirator fit is permitted.

^c Hardhat and splash-shield areas are to be determined by the SSHO.

^d Ear protection should be worn when conversations cannot be held at distances of 3 feet or less without shouting.

^e Cartridge change-out schedule is at least every 8 hours (or one work day), except if relative humidity is > 85%, or if organic vapor measurements are > midpoint of Level C range --then at least every 4 hours.

If encountered conditions are different than those anticipated in this APP, contact the HSPA/CIH. **Where AGVIQ-CH2M HILL personnel are required to use a respirator to provide respiratory protection, AGVIQ-CH2M HILL personnel shall receive respiratory protection awareness training. Contact the HSPA/CIH to receive this training, prior to using any respiratory protective device.**

^f Performing a task that requires an upgrade to a higher level of protection (e.g., Level D to Level D modified/Level C) is permitted only when the PPE requirements have been approved by the HSPA/CIH, and an SSHO qualified at that level is present.

Josh Painter, CSP

Name

05/21/2012

Date of Certification

9.33.9 Exposure Monitoring/Air Sampling

(Reference CH2M HILL SOP HSE-207, Exposure Monitoring for Airborne Chemical Hazards)

When performing site monitoring, record all the information, such as in a field logbook. Note date and time, describe monitoring location (e.g., in breathing zone, at source, etc. and site location), and what the reading is. When equipment capable of data logging is used the readings may be electronically logged and printed for the report. If any action levels are reached, note it in the field logbook and note the action taken.

Exposure records (air sampling) must be preserved for the duration of employment plus thirty years. Ensure that copies of the field log book are maintained in the project file.

All site monitoring shall be performed by the SSHO who has been trained on proper monitoring methods and operation of all assigned instruments. The SSHO shall ensure that all equipment has been calibrated in accordance with Section 9.33.8.1 and has received all manufacture required maintenance.

The requirements for the worker exposure monitoring and air sampling in connection with the execution of identified project DFOWs are provided in Table 9-33-2 below.

TABLE 9-3 AIR MONITORING EQUIPMENT REQUIREMENTS

Instrument	Tasks	Action Levels ^a	Level of Protection or Action	Frequency ^b	Calibration
MIE PDR 1000 or equivalent aerosol monitor	<ul style="list-style-type: none">During all dust producing activities within the EZ	0 – 1.0 mg/m ³ (TWA) (in worker BZ)	Level D, Modified D1, or D2 as identified by Table 9-2 for dermal protection. Continue work, begin to institute dust control measures (water application) to keep the dust concentration as low as possible.	<ul style="list-style-type: none">Continuously during soil disturbing activities.	Daily
	<ul style="list-style-type: none">Mobilization and site preparationExcavation in impacted surface and subsurface soilSoil SamplingBackfill and Site RestorationDecontamination and Demobilization	> 1.0 mg/m ³ (TWA) (sustained 10 mins in worker BZ)	Stop dust producing work, begin to institute dust control measures (water application) until total TWA (dust) concentration remains below 1.0 mg/m ³ . If dust cannot be controlled to below 1.0 mg/m ³ Level C PPE may be required. If concentrations are sustained, remain elevated or frequently fluctuate above the action levels in the worker breathing zone then use of additional and appropriate engineering or administrative controls or a PPE upgrade must be evaluated by the Program CIH, Project Manager and Client before work may proceed.		
Airchek 52 personal sample Pump(s) (or equivalent)at a 2L/min flow rate w/ 0.8 micron mixed cellulose ester filter or equivalent (8 hrs) Via approved NIOSH/OSHA methods (i.e. NIOSH 7300/OSHA 125G)	<ul style="list-style-type: none">During any dust producing activity within the EZ that exceeds the dust monitoring action levels above.	Lead TWA < 30 ug/M ³ (0.03 mg/M ³)	Level D, Modified D1, or D2 as identified by Table 9-2 for dermal protection. Continue work	If dust cannot be controlled to the above action levels, perform this personal air sampling as soon as possible.	Before and after use
		Lead TWA >30 ug/M ³ (0.03 mg/M ³)	Stop Work, consult CIH/HSPA for proper engineering and/or administrative controls and PPE upgrade requirements before working in environments were COCs are potentially in excess of OELs.		

^a Action levels apply to sustained breathing-zone measurements above background.

^b The exact frequency of monitoring depends on field conditions and is to be determined by the SSHO; generally, every 5 to 15 minutes if acceptable; more frequently may be appropriate. Monitoring results should be recorded. Documentation should include instrument and calibration information, time, measurement results, personnel monitored, and place/location where measurement is taken (e.g., “Breathing Zone/MW-3”, “at surface/SB-2”, etc.).

Note: Worker breathing zone ambient air monitoring results must be logged on an Air Monitoring Log (See Attachment 3).

9.33.9.1 Air Monitoring Equipment Calibration Requirements

Air Monitoring equipment calibration specifications for air monitoring equipment identified in Table 9-2 are listed in Table 9-3, below.

TABLE 9-3 AIR MONITORING EQUIPMENT CALIBRATION REQUIREMENTS

Instrument	Gas	Span	Reading	Method
Dust Monitor: MIE PDR 1000 or equivalent	Dust-free air	Not applicable	0.00 mg/m ³ in "Measure" mode	Dust-free area OR Z-bag with high-efficiency particulate air filter
Personal Sample Pump(s): Airchek 52 or equivalent	NA	Not applicable	2 L/min	Manual adjustment of pump using rotometer to required pump sampling flow rate L/min,

Note: Air monitoring equipment calibration measures must be logged on the Project Air Monitoring Logs (See Attachment 3) and included in the final project record.

9.33.10 Heat and Cold Stress

The procedures for heat and cold stress monitoring are presented in section 9.14 "Heat and Cold Stress Monitoring Program" and will not be further elaborated upon in this section.

9.33.11 Standard Operating Safety Procedures, Engineering Controls, and Work Practices

9.33.11.1 Site Rules and Prohibitions

Site rules and prohibitions and requirements are defined by the sections identified below and will not be further elaborated upon in this section.

Section 8.0:	Accident Reporting and Investigation
Section 9.2:	Emergency Response Plans
Section 9.7:	Health Hazard Control Program
Section 9.33.10.6:	Site Control Measures
Section 10.5:	Drug Free Work Place Program

9.33.11.2 Work Permit Requirements

Any work permit requirements necessary to execute the assigned work is identified in section 7.1 "External Inspections/Certifications" of this APP and will not be further elaborated upon in this section.

9.33.11.3 Material Handling Procedures

Hazard Control Measures are included in section 9.7 "Health and Safety Hazard Control Program" and will not be further elaborated upon in this section.

9.33.11.4 Drum, Container, Tank Handling

(Reserved)

9.33.11.5 Comprehensive AHA of Treatment Technologies

(Reserved)

9.33.11.6 Site Control Measures

Access and egress to the project work sites during production and non-production periods where site operations are or could be regulated by 29CFR1910.120/29CFR1926 must be actively controlled to prevent exposure of both unprotected and untrained personnel. Primary control is provided by the presence a locked gate at the entrance to site 4 and site 3. Site control measures are implemented by the site supervisor/FTL.

Project managers and team leaders are to implement the following measures to ensure that proper site control measures are established.

- **Perform a safety briefing and range specific briefing with involved site personnel and prior to the start of work.**
- Evaluate and ensure worker safety in remote/secluded work areas.
- Site workers and visitors shall sign-in and sign-out as they enter and exit the site work boundaries (see Attachment 3).
- All site workers who enter or exit from a HAZWOPER EZ must sign the EZ log located in Attachment 3 of this APP.
- Confirm if potentially dangerous activities (such as hunting seasons) could be occurring in or adjacent to any AGVIQ-CH2M HILL work areas that may jeopardize worker health and safety.
- Reschedule field activities when potentially dangerous activities are occurring adjacent to AGVIQ-CH2M HILL work locations. Ensure proper two-way communications with workers in remote work areas.
- Establish and maintain the “Buddy System.”
- Designate an emergency evacuation route (see Figure 9-1 of this APP).
- Designate an evacuation assembly area.
- Topics for briefing on site safety: general discussion of Health and Safety Plan, site-specific hazards, locations of work zones, PPE requirements, equipment, special procedures, emergencies.
- The SSHO records safety briefing attendance in a logbook and documents the topics discussed.
- Ensure that applicable AGVIQ-CH2M HILL personnel have received the BBLPS Training
- Be aware of any potential for hazardous chemical exposure and know what precautions/training is required.

- Establish support, decontamination, and exclusion zones. Delineate with flags or cones as appropriate. Support zone should be upwind of the site. Use access control at entry and exit from each work zone.
- Know how an emergency should be reported.
- Identify exact facility location and position (where possible) when contacting EMS/Fire Dispatch.
- Have readily available copy of the Hospital Route Map.
- Establish onsite communication consisting of the following:
 - Line-of-sight and hand signals
 - Air horn
 - Two-way radio or cellular telephone if available
- Establish offsite communication.
- Know how, what, when injuries/accidents are reported and treated.
- The site supervisor/FTL, SSHO or other authorized designee is to conduct periodic inspections of work practices and site conditions to determine the effectiveness of this plan. Such inspections should identify site conditions or actions that are not consistent with the policies and procedures of the H&S program, report to the AGVIQ-CH2M HILL Project Manager (overall), Program Management and the AGVIQ-CH2M HILL CIH/HSPA. The project team shall develop and implement corrective action procedures in a timely manner.

9.33.11.7 HAZWOPER Site Control Measures

To prevent both exposure of unprotected personnel and migration of contamination, work areas and personal protective equipment requirements will be clearly identified. This APP recommends that the area surrounding each of the work areas be divided into three (3) distinct zones; the exclusion zone (EZ), the contamination reduction zone (CRZ), and the support zone (SZ).

Only individuals who meet the requirements of 29 CFR 1910.120/29CFR1926.65 and who are authorized by the AGVIQ-CH2M HILL individual responsible for site operations or the SSHO shall be allowed entry into the EZ and CRZ. Suitable means and methods (high visibility fencing, caution tape signage, traffic cones, traffic delineators, or other physical barriers) shall be employed to demarcate the EZ and CRZ boundaries at this site to prevent unauthorized entry into these controlled work zones. A CRZ for decontamination shall be established adjacent to the EZ. The SZ shall be kept free from contamination.

A typical EZ/CRZ/SZ representation is illustrated in Section 9.33.11 “Personal Hygiene and Decontamination” of this APP.

9.33.11.8 Exclusion Zone

An EZ will be constructed to surround each work area where the greatest potential for worker exposure to identified site COCs may exist. The EZ may need to be transient as the work progresses, depending upon the type of work that is being executed. Because of potential site space limitations, the exclusion zone fencing may also include any available

“permanent” perimeter fencing or other established physical barriers. Note that the term “permanent” is often used to describe the outer limits (or perimeter) of a work site or designated site area. Other temporary barriers (i.e. caution tape, high visibility construction fencing); maybe used to supplement existing permanent barriers to demarcate the EZ to identify the restricted access. Access to the EZ will be restricted to personnel wearing the prescribed level of protective equipment and meeting the training and medical criteria of this plan.

9.33.11.9 Contamination Reduction Zone

Each CRZ zone will be a clearly marked corridor between the EZ and the SZ. The CRZ for each area will be located immediately adjacent to the EZ. This area will be identified with yellow tape, high visibility construction fencing or other suitable barriers.

The CRZ is where personnel will begin the sequential decontamination process when exiting the EZ. To prevent cross contamination and for accountability purposes, all personnel must enter and leave the EZ through the CRZ.

Contaminated personnel and equipment will exit the EZ directly to the CRZ. Each CRZ will contain a constructed decontamination stations for personnel and equipment. If possible, the CRZ will be located upwind of each EZ, however due to site constraints this may not be possible. Temporary support zones for each work area will be located adjacent to the CRZs.

9.33.11.10 Support Zone

Temporary support zones and staging areas will be established at the entrance of each control area. Potable water, an eye wash, and first aid supplies will be located at each temporary support zone. No hazardous or potentially hazardous materials will be allowed in the support zone unless it is in a properly labeled container that has no external contamination. Eating, drinking and smoking will only be allowed in this area, at designated locations.

Portable bathroom facilities will be located near the work areas. In addition, potable water and water and soap for hand washing will be available at the support zone, along with containers for solid waste for use by site personnel, in addition to first aid stations and administrative information.

9.33.11.11 HAZWOPER Compliance Plan

Certain parts of the site work are covered by state or federal HAZWOPER standards and therefore require training and medical monitoring. Anticipated HAZWOPER tasks (Section 2.4 or otherwise determined) might occur consecutively or concurrently with respect to non-HAZWOPER tasks. This section outlines procedures to be followed when approved activities specified in Section 2.4 of this APP do not require 24- or 40-hour training. Non-HAZWOPER-trained personnel also must be trained in accordance with all other state and federal OSHA requirements.

- In many cases, air sampling, in addition to real-time monitoring, must confirm that there is no exposure to gases or vapors before non-HAZWOPER-trained personnel are allowed on the site, or while non-HAZWOPER-trained staff are working in proximity to HAZWOPER activities. Other data (e.g., soil) also must document that there is no potential for exposure. The Program CIH must approve the interpretation of these data.

- When non-HAZWOPER-trained personnel are at risk of exposure, the SSHO must post the exclusion zone and inform non-HAZWOPER-trained personnel of the:
 - Nature of the existing contamination and its locations
 - Limitations of their access
 - Emergency action plan for the site
- Periodic air monitoring with direct-reading instruments conducted during regulated tasks also should be used to ensure that non-HAZWOPER-trained personnel (e.g., in an adjacent area) are not exposed to airborne contaminated media.

When exposure is possible, non-HAZWOPER-trained personnel must be removed from the site until it can be demonstrated that there is no longer a potential for exposure to health and safety hazards.

9.33.12 Personal Hygiene and Decontamination

Proper decontamination procedures will be required to ensure negative worker exposure to any identified constituents of concern or hazardous materials. Good personal hygiene practices must be exercised by AGVIQ-CH2M HILL personnel to facilitate negative exposure. These practices include but are not limited to the following: 1) Eating, drinking, smoking and tobacco use shall only be conducted in designated areas and not in areas where there is any exposure to hazardous material/waste, flammable/combustible liquids and gases may exist and 2) wash hands and face, if applicable, before eating, drinking, smoking or using tobacco 3) shower as soon as feasible after completing field activities. The SSHO should establish areas for eating, drinking, and smoking. Contact lenses are not permitted in exclusion or decontamination zones.

The SSHO must establish and monitor the decontamination procedures and their effectiveness. Decontamination procedures found to be ineffective will be modified by the SSHO. The SSHO must ensure that procedures are established for disposing of materials generated on the site.

9.33.12.1 Decontamination Specifications

Personnel	Sample Equipment	Heavy Equipment
<ul style="list-style-type: none"> • Boot wash/rinse • Glove wash/rinse • Outer-glove removal • Body-suit removal • Inner-glove removal • Respirator removal • Hand wash/rinse • Face wash/rinse • Shower ASAP • Collect, properly containerize, label and dispose of all spent of PPE • Collect, properly containerize, label and dispose of all spent decontamination fluid contain for offsite disposal (Do not dispose of spent PPE or similar waste in government disposal receptacles.) 	<ul style="list-style-type: none"> • Wash/rinse equipment • Solvent-rinse equipment • Contain solvent waste for offsite disposal • Collect, properly containerize, label and dispose of all spent of decontamination fluid and residual solids for offsite disposal 	<ul style="list-style-type: none"> • Power wash • Steam clean • Collect, properly containerize, label and dispose of all spent of decontamination fluid or residual solids

For this project the use of Level C PPE is not anticipated and as such, the need for the establishment of sophisticated decontamination coordinators and specifically respirator cleaning stations may not be warranted based on the expected site operations. However, in all cases where site operations are regulated by 29CFR1910.120/29CFR1926.65, it is essential for workers to maintain good positive personal hygiene practices and proper containerization, labeling, storage, disposal and overall management of spent disposable PPE. Figure 9-3 graphically represents personnel and equipment decontamination processes.

9.33.13 Equipment Decontamination

The sequence and location of equipment decontamination is defined by section 9.33.11.1 and Figure 9-3, Decontamination Line.

9.33.14 Emergency Equipment and First Aid

The requirements for emergency preparedness, equipment and supplies is provided in section 9.2 “Emergency Response Plans” and will not be elaborated upon further in this section.

9.33.15 Emergency Response and Contingency Procedures

The requirements for emergency response and contingency procedures are provided in section 9.2 “Emergency Response Plans” and will not be elaborated upon further in this section.

9.33.16 Pre-Emergency Planning

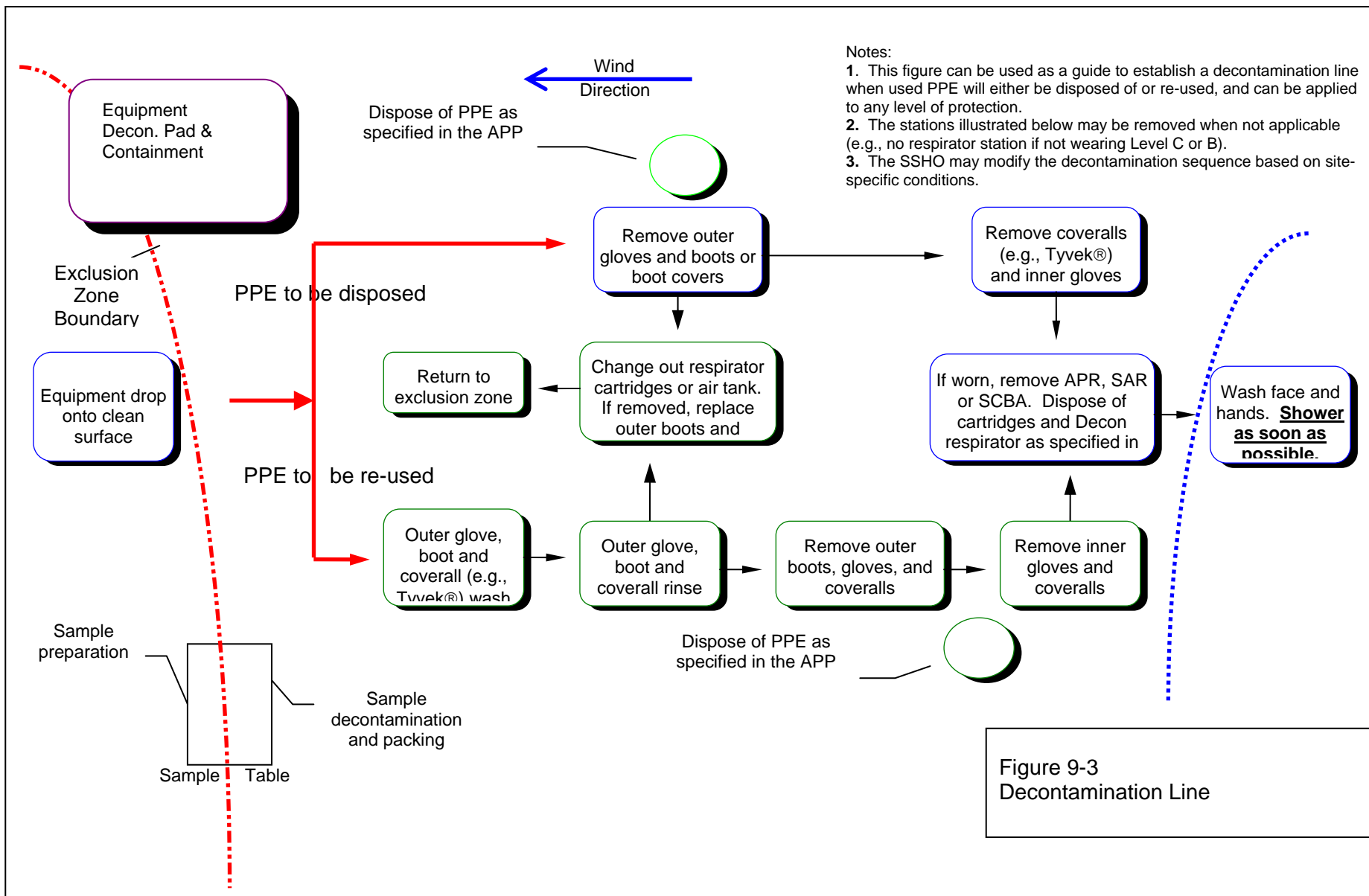
The requirements for pre-emergency planning are provided in section 9.2 “Emergency Response Plans” and will not be elaborated upon further in this section.

9.33.17 Personnel and Lines of Authority - Emergency Situations

Personnel and lines of authority for both chain of command and emergency situations are included in section 4.0 “Responsibilities and Lines of Authority” and will not be elaborated upon further in this section.

9.33.18 Criteria and Procedures for Emergency Recognition and Site Evacuation

Procedures of emergency recognition and site evacuation is outline in section 9.2 “Emergency Response Plans” of this APP and will not be elaborated upon further in this section.



9.33.19 Decontamination and Medical Treatment of Injured Personnel

In the event a worker in an Exclusion Zone (EZ) needs medical assistance primary consideration must be given to remove all site contaminants before transfer of the employee to an uncontaminated area or atmosphere or before being handled by untrained/protected medical response personnel. Decontamination of personnel exposed to site COCs should be decontaminated as quickly as possible via the following procedures:

1. After removal from the contaminated area, the exposed individual(s) will be decontaminated by washing the contaminated areas with appropriate decontamination solutions and flushing with potable water. In particular, direct skin (dermal) contact must be addressed via decontamination with soapy water. Decontamination operations must be performed as quickly as possible, as time is of the essence in emergency medical situations. Field team personnel shall utilize disposable PPE wherever possible to promote rapid decontamination of personnel in the EZ.
2. If a respirator is used in the EZ, the respirator mask is left on the exposed individual until decontamination has been completed unless it has been determined that areas of the face were contaminated and the mask must be removed to decontaminate.
3. After decontamination, the contaminated clothing is removed and skin contamination washed away. If possible, decontamination is completed before the exposure individual is taken to a medical facility.
4. ONLY potable water will be used when flushing the eyes or mouth.
5. All receptacles used for containing protective clothing shall be equipped with lids that can be closed to prevent the release of contaminants and the introduction of rainfall.
6. Initiate first aid and CPR, upon completion of decontamination operations.
7. Make certain that the injured person is accompanied to the emergency room.
8. When contacting the medical consultant, give your name and telephone number, the name of the injured person, the extent of the injury or exposure, and the name and location of the medical facility where the injured person was taken.
9. Report incident as outlined in Section 8.0 "Accident Reporting and Investigation" of this APP.
10. A map showing the route to the local hospital is shown on Figure 9-2-2 of this APP.

Note: For CH2M HILL personnel who experience a minor non-life threatening emergency that requires medical attention, please refer to for the "Emergency Nurse Instructions" and "Initial Medical Treatment Form" in **Attachment 9** of this APP.

9.33.20 Route Map to Emergency Medical Facilities

The route map to area emergency medical facilities is provided by Figure 9-2 of section 9.2.9 "Medical Support" of this APP and will not be elaborated upon further in this section.

9.33.21 Responsibilities

The responsibilities for HAZWOPER regulated activities will be the same as for non-HAWOPER regulated activities. Both project level and AGVIQ-CH2M HILL program level responsibilities for all operations are included in section 4.0 “Responsibilities and Lines of Authority” and will not be further elaborated upon in this section.

9.33.22 Training

All training requirements for this project are discussed in section 6.0 “Training” of this APP and will not be elaborated upon further in this section.

9.33.23 Medical Surveillance

All worker surveillance requirements for this project are discussed in section 6.0 “Training” of this APP and will not be elaborated upon further in this section.

9.33.24 Facility/Construction Project Emergency Response

Facility/construction project emergency response emergency procedures are outlined in section 9.2 “Emergency Response Plans” of this APP and will not be elaborated upon further in this section.

9.34 Blasting Safety Plan

(Reserved)

9.35 Diving Plan

(Reserved)

9.36 Confined Space Program

(Reference SOP # HSE&Q 203, Confined Space)

(Reserved)

10.0 Risk Management Process

AGVIQ-CH2M HILL utilizes a BBLPS to support the implementation of our RMP by identifying, analyzing and controlling certain risks (or liabilities) that may be encountered during the execution of assigned projects. The BBLPS is a system to prevent or reduce losses using behavior-based tools and proven management techniques to focus on behaviors or acts that could lead to losses.

The four basic loss prevention tools that will be used to implement the BBLPS on this project include:

- Activity Hazard Analysis (AHA)
- Pre-Task Safety Plans (PTSP)
- Loss Prevention Observations (LPO)
- Loss and Near Loss Investigations (NLI)
- Drug Free Workplace Program (DFWP)

The Project Manager and site superintendent are responsible for implementing the BBLPS on the project site. These personnel typically delegate authority to the SSHO for the project specific implementation of the BBLPS, but the Project Manager and Site Superintendent/Supervisor or Field Team Leader remains accountable for its implementation.

In an effort to provide a safe and healthy workplace for all program participants, AGVIQ-CH2M HILL promotes and implements a DFWP. AGVIQ-CH2M HILL personnel must participate in and adhere to the requirements of the DFWP.

10.1 Activity Hazard Analysis

One of the key elements in executing the BBLPS, and subsequently reducing project risk, is the use of an AHA for each major phase of work. An AHA defines the activity being performed, the hazards posed, and control measures required to perform the work safely. Workers are briefed on the AHA before doing the work and their input is solicited before, during, and after the performance of work to further identify the hazards posed and control measures required.

AHA will be implemented before beginning each project activity posing H&S hazards to project personnel using the AHA forms provided in **Section 10.6**, below. The AHA will identify the work tasks required to perform each activity, along with potential H&S hazards and recommended control measures for each work task. In addition, a listing of the equipment to be used to perform the activity, inspection requirements and training requirements for the safe operation of the equipment listed must be identified.

An AHA will be prepared for all field activities performed by AGVIQ-CH2M HILL and subcontractors during the course of the project and should be prepared or reviewed by a designated AGVIQ-CH2M HILL Health and Safety representative or other designated qualified safety professional.

AGVIQ-CH2M HILL subcontractors will be required to provide AHAs specific to their scope of work on the project for acceptance by the SSHO, AGVIQ-CH2M HILL Health and Safety

representative or other designated qualified safety professional. Each subcontractor will submit AHAs for their field activities, as defined in their work plan/scope of work, along with their project-specific APP. Additions or changes in AGVIQ-CH2M HILL or subcontractor field activities, equipment, tools or material to perform work, or additional/different hazard encountered that require additional/different hazard control measures requires either a new AHA to be prepared or an existing AHA to be revised.

Table 10-6, of Section 10.6, below summarizes identified hazards associated with the phases of work anticipated with the project execution. Table 10-6 provides the basis for the development of Activity Hazard Analysis documents, which must be implemented as part of the AGVIQ-CH2M HILL RMP and BBLPS.

Section 10.6 of this APP contains applicable AHA documents, which in addition to the content of this APP, are intended to reinforce project or program requirements and present project control measures for anticipated or encountered hazards that may occur during the execution of an employee's assigned tasks.

10.2 Pre-Task Safety Plans

Daily safety meetings are held with all designated project site personnel in attendance in order to review the potential hazards that may be associated with daily work assignments, reevaluate required H&S procedures or information presented in task specific AHAs. The purpose of these daily meetings is to set-forth various hazard control measures or policies and procedures which must be implemented by project staff to facilitate the reduction or elimination of work place incidents that could be associated with the scheduled work. The topics developed and delivered during each production day are documented on a PTSP.

At the start of each day's activities, the site supervisor/FTL, SSHO or other qualified and designated person completes the PTSP, provided in **Attachment 7**, with input from the work crew, during their regular daily safety meeting. The day's tasks, personnel, tools, and equipment that will be used to perform these tasks are listed, along with the hazards posed and required H&S procedures, as identified in the AHA. The use of PTSPs better promotes worker participation in the hazard recognition and control process, while reinforcing the task-specific hazard and required H&S procedures with the crew each day.

After the delivery of each PTSP, all personnel in attendance of the daily safety meeting shall acknowledge the delivered material with the addition of their printed name, signature and date that the material was delivered to them on the last page of the form. These completed PTSPs shall be kept on-site in a neat and organized manner for review by management or project Owner, as deemed necessary.

The use of safety meetings via the use of a PTSP or other similar format is a common safety practice in the construction industry.

10.3 Loss Prevention Observations

LPOs are a tool to be used by management, site supervisor/FTL s and the SSHO to determine whether workplace behaviors, acts and conditions are consistent or not consistent with

established health and safety procedures, site specific APPs requirements or other established safety standards. An LPO may also be completed by individual work crew members to initiate a necessary corrective action, to identify a work crew members positive performance or contribution or undesirable act that would endanger the employee or other co-workers. Completion of the LPO provides a mechanism for management to reinforce positive actions for work practices performed correctly, while also identifying and eliminating work procedures, site conditions or behaviors that could result in eventual losses.

At a minimum, at least one LPO each week for tasks/operations addressed in the project-specific APP or AHA will be completed by the AGVIQ-CH2M HILL site supervisor/FTL or SSHO to compare the actual work process against established work procedures identified in the project-specific APP and AHAs. The LPO form in **Attachment 8** will be used for this process.

10.3.1 Deficiency Tracking System

On NAVFAC contracts where adherence to the US Army Corps of Engineers' EM 385-1-1, "Safety and Health Requirements Manual" is required in addition to OSHA regulations, the site supervisor is responsible for ensuring that the a "Deficiency Tracking System" or log is maintained. The deficiency tracking system is used to identify and monitor the status of safety and health "deficiencies" observed at the project-specific location, in chronological order. The deficiency tracking system includes the following information:

- Date deficiency identified
- Description of deficiency
- Name of person responsible for correcting deficiency
- Projected resolution date
- Date actually resolved

The deficiency tracking system or log is posted on a project bulletin board or other conspicuous place commonly accessed by project or facility personnel, updated daily, and available for review by the NAVFAC POCs or by AGVIQ-CH2M HILL Project Management, Senior Management or Health and Safety Representatives. At project or facility sites where the use of a Deficiency Tracking System is required, this log supplements the LPO process.

At the end of the project, or when facility operations are completed, hard copies of the deficiency tracking system data or logs are included in the final record.

10.4 Loss/Near-Loss Investigations

Loss and Near Loss Incident investigations are detailed in section 8.0 "Accident Reporting and Investigation" of this APP and will not be further elaborated upon in this section.

10.5 Drug-Free Workplace Program

AGVIQ-CH2M HILL does not tolerate illegal drugs, or any use of drugs, controlled substances, or alcohol that impairs an employees work performance or behavior. AGVIQ-CH2M HILL has established a policy that its employees and subcontractors will not be involved in any manner with the unlawful manufacture, distribution, dispensation, possession, sale, or use of illegal drugs in the workplace. The use or possession of alcohol

in the workplace is also prohibited. Any violation of these prohibitions may result in discipline or immediate discharge.

10.6 Project Specific Activity Hazard Analyses

Applicable project AHA documents for each major phase of work anticipated for this contract are contained below. It is the intent of these AHAs to reinforce project or program requirements and present project control measures for anticipated or encountered hazards that may occur during the execution of an employee's assigned tasks.

Table 10-6 below summarizes identified hazards associated with the phases of work anticipated with work scheduled at NAS Key West. Table 10-6 provides only the **basis** for the development of Activity Hazard Analysis documents, which must be implemented as part of the AGVIQ-CH2M HILL Health and Safety Program, BBLPS.

Applicable project Activity Hazard Analysis (AHA) documents for each major phase of work anticipated for this contract are contained below and are intended to reinforce project or program requirements and present project control measures for anticipated or encountered hazards that may occur during the execution of an employee's assigned tasks. Additional project specific hazard control measures are also identified in **Section 9.7** of this APP.

TABLE 10-6: ACTIVITY HAZARD ANALYSIS BASIS

Potential Hazards	Anticipated Project Activities				
	Mobilization & Site Preparation	Soil Excavation	Soil Sampling	Backfill and Site Restoration	Decontamination and Demobilization
Aerial Lift					
Adverse Weather	X	X	X	X	X
Biological	X	X	X	X	X
Buried Utilities		X			
Brush Clearing	X				
Chemical Hazards	X	X	X	X	X
Concrete and Masonry					
Confined Space Entry					
Cuts/Abrasions	X	X	X	X	X
Cranes					
Demolition/dismantling					
Electrical Safety	X	X			X
Excavations		X	X	X	
Fall Protection					
Fire Prevention	X	X	X	X	X
Forklifts					
Hand & Power Tools	X	X	X	X	X
Haul Truck Operations	X	X		X	X
Heat /ColdStress	X	X	X	X	X
Heavy Equipment	X	X		X	X
Housekeeping	X	X	X	X	X
Ladders & Stairs					
Land Clearing / Stripping	X				
Lockout /Tagout					
Manual Lifting	X	X	X	X	X
Material Handling	X	X		X	X
Machine Guarding		X		X	
MEC/MPPEH					
Noise	X	X		X	X
Overhead Utilities	X	X		X	X
Pinch/Struck by/Caught	X	X		X	X
Pressure Washing					X
Pressurized Lines/ quip.					
Rigging					
Scaffolding					
Slips/Trips/Falls	X	X	X	X	X
Spill Prevention	X	X	X	X	X
Suspended Loads					
Vacuum Truck Ops.					
Vehicle Traffic	X	X		X	X
Visible Lighting	X	X	X	X	X
Welding or cutting					
Working Alone					
Working over water					

Section 10.6 (continued)
Project Activity Hazard Analyses (AHAs)

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Mobilization and Site Prep	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
Mobilization and Site Prep	Preparedness	<ul style="list-style-type: none"> Verify that EMS services are available and can respond in a prompt manner prior to the start of work. Base or Local Emergency medical Service and Fire Dispatch numbers programmed into cellular phones. Have hospital route maps readily available. Buddy System maintained for all phases of work. 	L
	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may developing. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellant with DEET or other insect repellant to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Brush/ Land Clearing	<ul style="list-style-type: none"> Only qualified personnel, by training or previous experiences shall operate landscaping mowers. Mower operators shall shut-down and disengage hydraulic mower when ground personnel must approach mowing operations. Mower deck should never be tilted vertically or raised more than 6" above the ground. Ensure that equipment kill switches are properly operating and accessible by mowing equipment operators. Mower operators should not operate equipment on steep, slippery or uneven slopes or unstable ground surfaces which could cause the mower to flip over or otherwise become unstable to the point where operators or ground personnel could become exposed to the blades. Ensure all mechanic guards or protective devices over mower discharge chutes are in place. Operators of hydraulic mowers cutters should not raise cutting decks more than 6" above ground surface to cut saplings. Operators should review mower manufacturer manuals to ensure that the mower is operated in accordance with manufacturer's parameters. Seat belts or other restraint system shall be used by mower operators. Perform daily maintenance and inspections on mowing equipment. Keep documentation on site. 	M
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Mobilization and Site Prep	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Electric Safety	<ul style="list-style-type: none"> Ensure that electric connections from generator set to temporary construction facilities are performed by qualified electricians. Inspect all electrical power circuits are sufficient prior to connection. If/when electrical extension cords are required to complete work, extension cords must be: <ul style="list-style-type: none"> ✓ Equipped with third-wire grounding. ✓ Covered, elevated, or protected from damage when passing through work areas. ✓ Protected from pinching if routed through doorways. ✓ Extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed. ✓ Rated to handle the voltage/amperage of equipment. 	M
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Mobilization and Site Prep	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task. 14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
Job Steps	Hazards	Controls	
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Heavy Equipment	<ul style="list-style-type: none"> Seat belts or other restraint system shall be used by heavy equipment operators. Perform daily maintenance and inspections on operating equipment. Keep documentation on site. Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. Equipment shall only be operated by personnel qualified by prior training or experience. Ensure that a stable ground surface is available for the operation of heavy equipment. Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Mobilization and Site Prep	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift – especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. Suspended loads shall not be passed over ground personnel. Ground personnel shall not walk under or in front of suspended loads. 	L
	Noise	<ul style="list-style-type: none"> Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Mobilization and Site Prep	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lighting must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
EQUIPMENT REQUIRED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none"> Fire extinguisher (with fuel and electrical sources) Eye wash (small portable type) Miscellaneous power and manual hand tools. First Aid/BbPK/CPR shield Spill Kit Communication devices 		<ul style="list-style-type: none"> Visual Inspections of designated work areas identify and address hazardous conditions. Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.) 	<ul style="list-style-type: none"> Review APP for new site personnel. 1st Aid/CPR 1st Aid/CPR (2 per site when medical attention a medical facility or physician is more than 5 minutes away to two or more employees. Supervisors - BBLPS, SC-HW, 10 hour OSHA Construction Safety Training or equivalent Training and medical surveillance per 29CFR1910.120

NOTES (Field Notes, Review Comments, etc.):

Overall Risk Assessment Code (RAC) (Use highest code)					
Risk Assessment Code (RAC) Matrix					
Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L
Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.			RAC Chart		
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible			E = Extremely High Risk		
			H = High Risk		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.			M = Moderate Risk		
			L = Low Risk		

Probability: Likelihood of the hazard to cause a incident, near miss, or accident.

- Frequent - Occurs very often, known to happen regularly
- Likely - Occurs several times, a common occurrence
- Occasional - Occurs sporadically, but is not uncommon
- Seldom - Remotely possible, could occur at some time
- Unlikely - Can assume will not occur, but not impossible

Severity: Outcome/degree of the incident, near miss, or accident.

- Catastrophic - Death or permanent total disability; Major property damage
- Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems
- Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment
- Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage

PRINT

SIGNATURE

Date/Time

Supervisor Name: _____

SSHO Name: _____

SITE PERSONNEL

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
Mechanical Soil Excavation	Preparedness	<ul style="list-style-type: none"> Verify that EMS services are available and can respond in a prompt manner prior to the start of work. Base or Local Emergency medical Service and Fire Dispatch numbers programmed into cellular phones. Have hospital route maps readily available. Buddy System maintained for all phases of work. 	L
	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellant with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Buried Utilities or Unknown Objects	<ul style="list-style-type: none"> Contact Florida Sunshine One Call to secure a utility owner verification request number at (800) 552-7001 or (800) 552-3120 for utility clearance verification. Keep copies of any written documentation (faxes, email printouts) regarding utility location verification provided by utilities owners in the office project file and in a working field file on-site. Photo document owner provided field utility mark-outs as related to proposed limits of ground disturbing activities prior to the start of work. Conduct "third" party utility clearance when the locations of utilities may be in question and document results of third party utility location. Determine if a NAVFAC "Excavator Permit" is required prior to performing any ground disturbing activities. Hand dig around identified utilities (within 5') or as otherwise required by NAVFAC issued excavation permit. Review base engineering records or drawings against utility owner or third party utility mark-out to verify any potential differences. Protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations. If the markings of utility locations are destroyed or removed before excavation commences or is completed, utilities must be relocated/marked. Where unknown or unanticipated buried objects are encountered (i.e. drums, tanks, cylinders, munitions of explosive concern, soil with unusual staining or odor) AGVIQ-CH2M HILL JV or subcontractor personnel shall 1) secure equipment to the extent possible, without causing bodily injury, 2) evacuate the work area and 3) immediately notify the site manager, SSO or PM of the encountered condition. Work may only resume with appropriate documentation/notification that exposure hazards (physical or chemical) do not exist. Notify AGVIQ-CH2M HILL JV PM and program officials and applicable NAVFAC POCs and do not resume work until authorized to do so. 	M

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Electric Safety	<ul style="list-style-type: none"> Ensure that electric connections from generator set to temporary construction facilities are performed by qualified electricians. Inspect all electrical power circuits are sufficient prior to connection. If/when electrical extension cords are required to complete work, extension cords must be: <ul style="list-style-type: none"> ✓ Equipped with third-wire grounding. ✓ Covered, elevated, or protected from damage when passing through work areas. ✓ Protected from pinching if routed through doorways. ✓ Extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed. ✓ Rated to handle the voltage/ampereage of equipment. 	M
	Excavations	<ul style="list-style-type: none"> Inspect the excavation and temporary water dam every day and after everyday hazard increasing event. Documentation of this inspection must be maintained daily and available as part of the project record. Documentation should be available on-site for inspection. All overburden soil removed during excavation operations shall be stockpiled a minimum of 2' horizontal feet away from any open edge of the excavation. Increased distances are preferable. Material shall also be placed in such a manner to prevent excessive loading on the face of the cut. No person shall stand adjacent to a vertical excavation edge. Inspection and soil logging and photographic documentation shall occur from a safe distance or from cab of excavator, such that employee exposure to fall or engulfment hazards are eliminated. Personnel will not enter test pit excavations under any circumstance. Position bearing weight of excavator away from edges of open trenches. Where excavation edges are exposed to public, excavations shall be protected and identified from inadvertent access by the public until the excavation is backfilled. Provide Excavation Perimeter Protection and Warning signs as necessary to be in compliance with EM 385 11-1, Section 25B Safe Access and Appendix Q, "Perimeter Protection". 	

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L
	Heavy Equipment	<ul style="list-style-type: none"> Seat belts or other restraint system shall be used by heavy equipment operators. Perform daily maintenance and inspections on operating equipment. Keep documentation on site. Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. Equipment shall only be operated by personnel qualified by prior training or experience. Ensure that a stable ground surface is available for the operation of heavy equipment. Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift—especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. Suspended loads shall not be passed over ground personnel. Ground personnel shall not walk under or in front of suspended loads. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Machine Guarding	<ul style="list-style-type: none"> Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work. Ensure that all machine guards are in place to prevent contact with drive belts, rotary action devises/blades of mechanized heavy equipment or any other sources of mechanical injury . Do not modify safety features of heavy equipment. 	L
	Noise	<ul style="list-style-type: none"> Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lightly must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury /illness or property damage to supervisors immediately. 	L
Containerization, Transport, and Disposal of waste	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellant with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Electric Safety	<ul style="list-style-type: none"> Ensure that electric connections from generator set to temporary construction facilities are performed by qualified electricians. Inspect all electrical power circuits are sufficient prior to connection. If/when electrical extension cords are required to complete work, extension cords must be: <ul style="list-style-type: none"> ✓ Equipped with third-wire grounding. ✓ Covered, elevated, or protected from damage when passing through work areas. ✓ Protected from pinching if routed through doorways. ✓ Extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed. ✓ Rated to handle the voltage/amperage of equipment. 	M
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Heavy Equipment	<ul style="list-style-type: none"> Seat belts or other restraint system shall be used by heavy equipment operators. Perform daily maintenance and inspections on operating equipment. Keep documentation on site. Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. Equipment shall only be operated by personnel qualified by prior training or experience. Ensure that a stable ground surface is available for the operation of heavy equipment. Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift—especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. Suspended loads shall not be passed over ground personnel. Ground personnel shall not walk under or in front of suspended loads. 	L
	Machine Guarding	<ul style="list-style-type: none"> Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work. Ensure that all machine guards are in place to prevent contact with drive belts, rotary action devises/blades of mechanized heavy equipment or any other sources of mechanical injury. Do not modify safety features of heavy equipment. 	L
	Noise	<ul style="list-style-type: none"> Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Excavation	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat , Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lightly must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
EQUIPMENT REQUIRED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none"> Fire extinguisher (with fuel and electrical sources) Eye wash (small portable type) Miscellaneous power and manual hand tools. First Aid/BbPK/CPR shield Spill Kit Communication devices 		<ul style="list-style-type: none"> Visual Inspections of designated work areas identify and address hazardous conditions. Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.) 	<ul style="list-style-type: none"> Review APP for new site personnel. 1st Aid/CPR 1st Aid/CPR (2 per site when medical attention a medical facility or physician is more than 5 minutes away to two or more employees. Supervisors - BBLPS, SC-HW, 10 hour OSHA Construction Safety Training or equivalent Training and medical surveillance per 29CFR1910.120

NOTES (Field Notes, Review Comments, etc.):

Overall Risk Assessment Code (RAC) (Use highest code)					
Risk Assessment Code (RAC) Matrix					
Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L
Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.			RAC Chart		
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible			E = Extremely High Risk		
			H = High Risk		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.			M = Moderate Risk		
			L = Low Risk		

Probability: Likelihood of the hazard to cause a incident, near miss, or accident.

- Frequent - Occurs very often, known to happen regularly
- Likely - Occurs several times, a common occurrence
- Occasional - Occurs sporadically, but is not uncommon
- Seldom - Remotely possible, could occur at some time
- Unlikely - Can assume will not occur, but not impossible

Severity: Outcome/degree of the incident, near miss, or accident.

- Catastrophic - Death or permanent total disability; Major property damage
- Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems
- Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment
- Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage

Date/Time

SSH Name: _____

[illegible]

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter	8. Reviewed By:	10. Modified By:	
7. Date Prepared: 5/15/12	9. Date Reviewed:	11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
Pre-excavation in situ waste characterization and backfill sampling	Preparedness	<ul style="list-style-type: none"> Verify that EMS services are available and can respond in a prompt manner prior to the start of work. Base or Local Emergency medical Service and Fire Dispatch numbers programmed into cellular phones. Have hospital route maps readily available. Buddy System maintained for all phases of work. 	L
	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellant with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift—especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L


ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lightly must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
Post excavation confirmation sampling	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellent with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Buried Utilities or Unknown Objects	<ul style="list-style-type: none"> Contact Florida Sunshine One Call to secure a utility owner verification request number at (800) 552-7001 or (800) 552-3120 for utility clearance verification. Keep copies of any written documentation (faxes, email printouts) regarding utility location verification provided by utilities owners in the office project file and in a working field file on-site. Photo document owner provided field utility mark-outs as related to proposed limits of ground disturbing activities prior to the start of work. Conduct "third" party utility clearance when the locations of utilities may be in question and document results of third party utility location. Determine if a NAVFAC "Excavator Permit" is required prior to performing any ground disturbing activities. Hand dig around identified utilities (within 5') or as otherwise required by NAVFAC issued excavation permit. Review base engineering records or drawings against utility owner or third party utility mark-out to verify any potential differences. Protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations. If the markings of utility locations are destroyed or removed before excavation commences or is completed, utilities must be relocated/marked. Where unknown or unanticipated buried objects are encountered (i.e. drums, tanks, cylinders, munitions of explosive concern, soil with unusual staining or odor) AGVIQ-CH2M HILL JV or subcontractor personnel shall 1) secure equipment to the extent possible, without causing bodily injury, 2) evacuate the work area and 3) immediately notify the site manager, SSHO or PM of the encountered condition. Work may only resume with appropriate documentation/notification that exposure hazards (physical or chemical) do not exist. Notify AGVIQ-CH2M HILL JV PM and program officials and applicable NAVFAC POCs and do not resume work until authorized to do so. 	M


ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Excavations	<ul style="list-style-type: none"> Inspect the excavation and temporary water dam every day and after everyday hazard increasing event. Documentation of this inspection must be maintained daily and available as part of the project record. Documentation should be available on-site for inspection. All overburden soil removed during excavation operations shall be stockpiled a minimum of 2' horizontal feet away from any open edge of the excavation. Increased distances are preferable. Material shall also be placed in such a manner to prevent excessive loading on the face of the cut. No person shall stand adjacent to a vertical excavation edge. Inspection and soil logging and photographic documentation shall occur from a safe distance or from cab of excavator, such that employee exposure to fall or engulfment hazards are eliminated. Personnel will not enter test pit excavations under any circumstance. Position bearing weight of excavator away from edges of open trenches. Where excavation edges are exposed to public, excavations shall be protected and identified from inadvertent access by the public until the excavation is backfilled. Provide Excavation Perimeter Protection and Warning signs as necessary to be in compliance with EM 385 11-1, Section 25B Safe Access and Appendix Q, "Perimeter Protection". 	
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift—especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Soil Sampling	
6. Prepared By: Josh Painter	8. Reviewed By:	10. Modified By:	
7. Date Prepared: 5/15/12	9. Date Reviewed:	11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lighting must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
EQUIPMENT REQUIRED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none"> Fire extinguisher (with fuel and electrical sources) Eye wash (small portable type) Miscellaneous power and manual hand tools. First Aid/BbPK/CPR shield Spill Kit Communication devices 		<ul style="list-style-type: none"> Visual Inspections of designated work areas identify and address hazardous conditions. Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.) 	<ul style="list-style-type: none"> Review APP for new site personnel. 1st Aid/CPR 1st Aid/CPR (2 per site when medical attention a medical facility or physician is more than 5 minutes away to two or more employees. Supervisors - BBLPS, SC-HW, 10 hour OSHA Construction Safety Training or equivalent Training and medical surveillance per 29CFR1910.120

NOTES (Field Notes, Review Comments, etc.):	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; font-weight: bold; margin: 0;">Overall Risk Assessment Code (RAC) (Use highest code)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="6" style="padding: 5px;">Risk Assessment Code (RAC) Matrix</th> </tr> <tr> <th rowspan="2" style="padding: 5px;">Severity</th> <th colspan="5" style="padding: 5px;">Probability</th> </tr> <tr> <th style="padding: 5px;">Frequent</th> <th style="padding: 5px;">Likely</th> <th style="padding: 5px;">Occasional</th> <th style="padding: 5px;">Seldom</th> <th style="padding: 5px;">Unlikely</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Catastrophic</td> <td style="background-color: #FF0000; color: white;">E</td> <td style="background-color: #FF0000; color: white;">E</td> <td style="background-color: #FF0000; color: white;">H</td> <td style="background-color: #FF0000; color: white;">H</td> <td style="background-color: #FF0000; color: white;">M</td> </tr> <tr> <td style="padding: 5px;">Critical</td> <td style="background-color: #FF0000; color: white;">E</td> <td style="background-color: #FF0000; color: white;">H</td> <td style="background-color: #FF0000; color: white;">H</td> <td style="background-color: #FF0000; color: white;">M</td> <td style="background-color: #FF0000; color: white;">L</td> </tr> <tr> <td style="padding: 5px;">Marginal</td> <td style="background-color: #FF0000; color: white;">H</td> <td style="background-color: #FF0000; color: white;">M</td> <td style="background-color: #FF0000; color: white;">M</td> <td style="background-color: #FF0000; color: white;">L</td> <td style="background-color: #FF0000; color: white;">L</td> </tr> <tr> <td style="padding: 5px;">Negligible</td> <td style="background-color: #FF0000; color: white;">M</td> <td style="background-color: #FF0000; color: white;">L</td> <td style="background-color: #FF0000; color: white;">L</td> <td style="background-color: #FF0000; color: white;">L</td> <td style="background-color: #FF0000; color: white;">L</td> </tr> </tbody> </table> <p style="font-size: small; margin: 5px 0;">Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)</p> <p style="font-size: small; margin: 5px 0;">"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p style="font-size: small; margin: 5px 0;">"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible.</p> <p style="font-size: small; margin: 5px 0;">Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center; margin-top: 5px;"> <tr> <td style="padding: 5px;">RAC Chart</td> </tr> <tr> <td style="padding: 5px; background-color: #FF0000; color: white;">E = Extremely High Risk</td> </tr> <tr> <td style="padding: 5px; background-color: #FF0000; color: white;">H = High Risk</td> </tr> <tr> <td style="padding: 5px; background-color: #FF0000; color: white;">M = Moderate Risk</td> </tr> <tr> <td style="padding: 5px; background-color: #FF0000; color: white;">L = Low Risk</td> </tr> </table> </div> <p style="margin-top: 10px;"> Probability: Likelihood of the hazard to cause an incident, near miss, or accident. <ul style="list-style-type: none"> Frequent - Occurs very often, known to happen regularly Likely - Occurs several times, a common occurrence Occasional - Occurs sporadically, but is not uncommon Seldom - Remotely possible, could occur at some time Unlikely - Can assume will not occur, but not impossible </p> <p style="margin-top: 10px;"> Severity: Outcome/degree of the incident, near miss, or accident. <ul style="list-style-type: none"> Catastrophic - Death or permanent total disability; Major property damage Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage </p>	Risk Assessment Code (RAC) Matrix						Severity	Probability					Frequent	Likely	Occasional	Seldom	Unlikely	Catastrophic	E	E	H	H	M	Critical	E	H	H	M	L	Marginal	H	M	M	L	L	Negligible	M	L	L	L	L	RAC Chart	E = Extremely High Risk	H = High Risk	M = Moderate Risk	L = Low Risk
Risk Assessment Code (RAC) Matrix																																															
Severity	Probability																																														
	Frequent	Likely	Occasional	Seldom	Unlikely																																										
Catastrophic	E	E	H	H	M																																										
Critical	E	H	H	M	L																																										
Marginal	H	M	M	L	L																																										
Negligible	M	L	L	L	L																																										
RAC Chart																																															
E = Extremely High Risk																																															
H = High Risk																																															
M = Moderate Risk																																															
L = Low Risk																																															

Date/Time



ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
Excavation backfill	Preparedness	<ul style="list-style-type: none"> Verify that EMS services are available and can respond in a prompt manner prior to the start of work. Base or Local Emergency medical Service and Fire Dispatch numbers programmed into cellular phones. Have hospital route maps readily available. Buddy System maintained for all phases of work. 	L
	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidiodes. Use insect repellent with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task. 13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
Job Steps	Hazards	Controls	
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Heavy Equipment	<ul style="list-style-type: none"> Seat belts or other restraint system shall be used by heavy equipment operators. Perform daily maintenance and inspections on operating equipment. Keep documentation on site. Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. Equipment shall only be operated by personnel qualified by prior training or experience. Ensure that a stable ground surface is available for the operation of heavy equipment. Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift – especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. Suspended loads shall not be passed over ground personnel. Ground personnel shall not walk under or in front of suspended loads. 	L
	Machine Guarding	<ul style="list-style-type: none"> Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work. Ensure that all machine guards are in place to prevent contact with drive belts, rotary action devises/blades of mechanized heavy equipment or any other sources of mechanical injury . Do not modify safety features of heavy equipment. 	L
	Noise	<ul style="list-style-type: none"> Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lighting must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
Site Restoration	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidotes. Use insect repellant with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task. 13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
Job Steps	Hazards	Controls	RAC
	Excavations	<ul style="list-style-type: none"> Inspect the excavation and temporary water dam every day and after everyday hazard increasing event. Documentation of this inspection must be maintained daily and available as part of the project record. Documentation should be available on-site for inspection. All overburden soil removed during excavation operations shall be stockpiled a minimum of 2' horizontal feet away from any open edge of the excavation. Increased distances are preferable. Material shall also be placed in such a manner to prevent excessive loading on the face of the cut. No person shall stand adjacent to a vertical excavation edge. Inspection and soil logging and photographic documentation shall occur from a safe distance or from cab of excavator, such that employee exposure to fall or engulfment hazards are eliminated. Personnel will not enter test pit excavations under any circumstance. Position bearing weight of excavator away from edges of open trenches. Where excavation edges are exposed to public, excavations shall be protected and identified from inadvertent access by the public until the excavation is backfilled. Provide Excavation Perimeter Protection and Warning signs as necessary to be in compliance with EM 385 11-1, Section 25B Safe Access and Appendix Q, "Perimeter Protection". 	
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task. 13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
Job Steps	Hazards	Controls	
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L
	Heavy Equipment	<ul style="list-style-type: none"> Seat belts or other restraint system shall be used by heavy equipment operators. Perform daily maintenance and inspections on operating equipment. Keep documentation on site. Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. Equipment shall only be operated by personnel qualified by prior training or experience. Ensure that a stable ground surface is available for the operation of heavy equipment. Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M
	Housekeeping	<ul style="list-style-type: none"> During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Manual Lifting	<ul style="list-style-type: none"> AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift – especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. Suspended loads shall not be passed over ground personnel. Ground personnel shall not walk under or in front of suspended loads. 	L
	Machine Guarding	<ul style="list-style-type: none"> Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work. Ensure that all machine guards are in place to prevent contact with drive belts, rotary action devises/blades of mechanized heavy equipment or any other sources of mechanical injury . Do not modify safety features of heavy equipment. 	L
	Noise	<ul style="list-style-type: none"> Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Backfill and Site Restoration	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
15. Personal Protective Clothing and Equipment: Level D PPE D: Work clothes, reflective vests, hard hat, safety glasses and sturdy hard toed work boots, hearing and hand protection			
12. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task. 13. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
Job Steps	Hazards	Controls	
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lighting must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
EQUIPMENT REQUIRED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<ul style="list-style-type: none"> Fire extinguisher (with fuel and electrical sources) Eye wash (small portable type) Miscellaneous power and manual hand tools. First Aid/BbPK/CPR shield Spill Kit Communication devices 		<ul style="list-style-type: none"> Visual Inspections of designated work areas identify and address hazardous conditions. Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.) 	<ul style="list-style-type: none"> Review APP for new site personnel. 1st Aid/CPR 1st Aid/CPR (2 per site when medical attention a medical facility or physician is more than 5 minutes away to two or more employees. Supervisors - BBLPS, SC-HW, 10 hour OSHA Construction Safety Training or equivalent Training and medical surveillance per 29CFR1910.120

NOTES (Field Notes, Review Comments, etc.):

Overall Risk Assessment Code (RAC) (Use highest code)					
Risk Assessment Code (RAC) Matrix					
Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L
Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.			RAC Chart		
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible			E = Extremely High Risk		
			H = High Risk		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.			M = Moderate Risk		
			L = Low Risk		

Probability: Likelihood of the hazard to cause a incident, near miss, or accident.

- Frequent - Occurs very often, known to happen regularly
- Likely - Occurs several times, a common occurrence
- Occasional - Occurs sporadically, but is not uncommon
- Seldom - Remotely possible, could occur at some time
- Unlikely - Can assume will not occur, but not impossible

Severity: Outcome/degree of the incident, near miss, or accident.

- Catastrophic - Death or permanent total disability; Major property damage
- Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems
- Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment
- Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Decontamination and Demobilization	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	
		10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
Decontamination and Demobilization	Preparedness	<ul style="list-style-type: none"> Verify that EMS services are available and can respond in a prompt manner prior to the start of work. Base or Local Emergency medical Service and Fire Dispatch numbers programmed into cellular phones. Have hospital route maps readily available. Buddy System maintained for all phases of work. 	L
	Adverse Weather	<ul style="list-style-type: none"> Frequently observe the skyline for rain squalls and thunder storms systems that may develop. Bring clothing suitable for anticipated daily weather conditions. Shut down operations during heavy rain/lightning events or high wind conditions. For storms producing lightning, seek safe haven in a grounded structure or rubber vehicle. Implement 30 - 30 rule. Do not seek refuge under trees during electrical or high wind storm events. Do not use telephones during electrical storms, except in the case of emergency. 	L
	Biological	<ul style="list-style-type: none"> Prior to starting field activities, notify supervisors of known allergies to stinging insects and location of antidiotes. Use insect repellant with DEET or other insect repellent to deter being bit by mosquitoes or other stinging/biting insects. Avoid exposure to blood borne pathogens if first aid must be provided. Use universal precautions against exposure to blood borne pathogens. 	L
	Chemical Exposure	<ul style="list-style-type: none"> All personnel performing this task shall be trained and enrolled in a medical surveillance program in accordance with 29CFR1910.120. Do not allow dermal contact or incidental ingestion of impacted soil/sediment or water. Skin contact with contaminated water, soils, debris, or equipment shall be avoided at all times. Do not kneel or step in potentially contaminated media (soil or water) without first donning proper PPE. Exercise good hygiene practices. Always wash hands before eating, drinking, smoking and leaving site. Shower as soon as possible after leaving the site. Only eat, drink, smoke or chew tobacco in designated areas. Adhere to PPE and action monitoring requirements identified in the section 9.33.8 Site Safety and Health Plan of the APP. 	L
	Cuts/Abrasions	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp/cut edges or hand tools. Avoid use of razor knives. When cutting with knives, cut away from the body and never towards another worker. 	L
	Electric Safety	<ul style="list-style-type: none"> Ensure that electric connections from generator set to temporary construction facilities are performed by qualified electricians. Inspect all electrical power circuits are sufficient prior to connection. If/when electrical extension cords are required to complete work, extension cords must be: <ul style="list-style-type: none"> ✓ Equipped with third-wire grounding. ✓ Covered, elevated, or protected from damage when passing through work areas. ✓ Protected from pinching if routed through doorways. ✓ Extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed. ✓ Rated to handle the voltage/amperage of equipment. 	M
	Driving	<ul style="list-style-type: none"> Always using a seat belt while driving on military/government facilities. Always observe posted speed limits, traffic signs and signals. Never using a cell phone or two way radio while driving on military/government facilities. Violating these rules may result in loss of military/government facility driving privileges. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Decontamination and Demobilization	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Fire Prevention	<ul style="list-style-type: none"> Use only metal safety cans for storage and transfer of fuel. Use funnels and nozzles during fueling operations. Appropriately sized, easily accessible ABC fire extinguisher in work area. Fire extinguishers must be inspected monthly (inspection tag) and have an annual maintenance/inspection certification (tag) attached to the extinguisher. Only smoke in designated areas. Designated area must be free of combustible/flammable materials. ASTs for heavy equipment fuel storage should have secondary containment capabilities. 	L
	Hand Tools	<ul style="list-style-type: none"> Select and use the proper tool for the task. Do not use tools that have been damaged or repaired in a manner which is not consistent with manufacturer's requirements. 	L
	Haul Trucks	<ul style="list-style-type: none"> Haul truck operators should ensure all persons are clear before operating trucks or equipment. Before moving, operators should sound horn/back-up alarm. All equipment should be equipped with an operational backing alarm. Haulage trucks or equipment with restricted visibility should be equipped with devices that eliminate blind spots or a spotter must be provided. Employees should stay off haul roads. When approaching a haul area, employees should make eye contact and communicate their intentions directly with the equipment operator. All haul trucks must following the designated Haul Route established for the project site. 	L
	High Ambient Temperature	<ul style="list-style-type: none"> Provide and drink fluids to prevent worker dehydration. Minimize intake of caffeinated fluids. <ul style="list-style-type: none"> Institute a proper work-break regiment in a cool area to avoid heat stress symptoms and overexertion. Monitor for signs and symptoms of heat stress (maintain use of buddy system) when the ambient air temperature exceeds 70°F, the relative humidity is high (>50 percent), or when workers exhibit symptoms of heat stress and especially when wearing disposable or other types of coveralls. <ol style="list-style-type: none"> Heat Syncope = Sluggishness or fainting while standing erect or immobile in heat. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.</i> Heat Rash = Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure. <i>Treatment = Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.</i> Heat Cramps = Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours. <i>Treatment = Remove to cooler area. Rest lying down. Increase fluid intake.</i> Heat exhaustion = Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low. <i>Treatment = Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.</i> Heat Stroke = Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature. <i>Treatment = Cool rapidly by soaking in cool-but not cold-water. Call ambulance, and get medical attention immediately!</i> 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Decontamination and Demobilization	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12		8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: L
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Heavy Equipment	<ul style="list-style-type: none"> • Seat belts or other restraint system shall be used by heavy equipment operators. • Perform daily maintenance and inspections on operating equipment. Keep documentation on site. • Use caution around pressurized lines/hoses. Inspect hoses daily for cuts, abrasions and wear. • Equipment shall only be operated by personnel qualified by prior training or experience. • Ensure that a stable ground surface is available for the operation of heavy equipment. • Equipment operators shall not leave the cab of the equipment while they are lifting/controlling a load unless the load has been delivered to its intended transport location or the load has been fully secured (no potential for rolling onto or crushing ground personnel) and the equipment and controls are fully secured/disengaged and equipment is "de-energized". 	M
	Housekeeping	<ul style="list-style-type: none"> • During the course of executed project operations all debris, shall be kept cleared from work areas and passageways. Establish common paths of travel and keep them free from the accumulation of materials. Store tools, equipment, materials, and supplies in an orderly manner. 	L
	Manual Lifting	<ul style="list-style-type: none"> • AGVIQ-CH2MHILL or subcontract personnel must notify supervisors or safety representatives of preexisting medical conditions that may be aggravated or re-injured by lifting activities, especially lifting operation involving repetitive motions. • When lifting objects, lift using knees not back. For repetitive lifting tasks, the use of lifting braces/supports may be considered. Use heavy equipment to transfer heavy or awkward loads wherever possible. Have someone assist with the lift – especially for heavy (> 40lbs.) or awkward loads. Do not attempt to manually lift objects that should otherwise be lifted with heavy equipment. • Plan storage and staging to minimize lifting or carrying distances. Make sure the path of travel is clear prior to the lift. Avoid carrying heavy objects above shoulder level. 	L
	Material Handling	<ul style="list-style-type: none"> • Rigging use, maintenance and inspection shall be performed in accordance with the applicable standards of 29CFR1926.250 and Army Corps of Engineers Manual EM 385 1-1, section 15, Rigging, whichever is more stringent. • Only load rated (tagged or labeled) rigging shall be utilized on AGVIQ-CH2MHILL projects. User shall familiarize themselves with design load rate capacities (i.e. vertical, basket/cradle or choker applications) for the selected rigging. • Suspended loads shall not be passed over ground personnel. • Ground personnel shall not walk under or in front of suspended loads. 	L
	Machine Guarding	<ul style="list-style-type: none"> • Maintenance and repair of equipment that results in the removal of guards or would otherwise put anyone at risk requires lockout of that equipment prior to work. • Ensure that all machine guards are in place to prevent contact with drive belts, rotary action devices/blades of mechanized heavy equipment or any other sources of mechanical injury. Do not modify safety features of heavy equipment. 	L
	Noise	<ul style="list-style-type: none"> • Personnel exposed to loud working environments or in open cabs of heavy equipment or adjacent to operating heavy equipment shall wear hearing protection. 	L
	Overhead Utilities	<ul style="list-style-type: none"> • Maintain proper separation between Power Transmission Lines and over overhead utilities during the operation of heavy equipment or haul truck deliveries. • Be cognizant of utility pole guy wire positions during haul truck deliveries. 	L

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Decontamination and Demobilization	
6. Prepared By: Josh Painter 7. Date Prepared: 5/15/12	8. Reviewed By: 9. Date Reviewed:	10. Modified By: 11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
	Pinched/Struck-by/ Caught-in-between	<ul style="list-style-type: none"> Sufficient separation between ground support personnel and any operating heavy equipment must be maintained. Wear reflective vests or high visibility clothing to promote visibility of ground personnel for equipment operators. Isolate equipment swing areas from workers, fixed objects or other equipment. Ground personnel shall avoid positioning themselves between fixed objects, operating equipment. Make/maintain eye contact with operators before approaching equipment. Do not approach equipment from rear or from blind spot of operator. Stay out of the swing radius of operating heavy equipment. Understand and review hand signals. Designate one person to provide hand signals to equipment operators performing lifting/hoisting operations. Ensure equipment has operable back-up alarms. Step away from heavy equipment when adjustments (positioning) are made. Ensure heavy equipment operator has spotter for obstructed views and backing up. Ensure that all ground personnel have sufficient separation from tub grinding operations. 	L
	Pressure Washing (equipment cleaning)	<ul style="list-style-type: none"> Inspect pressure washer before use and confirm dead man switch fully operational. The wand must always be pointed at the work area. The Wand trigger should never be tied down in the open position. Never point the wand at yourself or another worker. The wand must be at least 42 inches from the trigger to the tip. The operator must maintain good footing. Non-operators must remain a safe distance from the operator. No unauthorized attachment may be made to the unit. Do not modify the wand. All leaks or malfunctioning equipment must be repaired immediately or the unit taken out-of-service. Rain gear (disposal coated chemical suits for Hazwoper operations), 16-inch-high steel-toed rubber boots, safety glasses, hard hat with face shield, and inner and outer nitrile gloves should be worn, at a minimum during pressure washing operations. Properly collect and containerize all decontamination fluids. 	L
	Slips, Trips, Falls/ housekeeping	<ul style="list-style-type: none"> Be aware of poor footing, potential slipping/tripping hazards in the work area, such as wet surfaces on piers/ramps, unprotected holes, drainage areas, rip rap, utilities, ground protrusions. Observe, mark and avoid any of these identified conditions. Use sturdy hard-toe work boots with sufficient ankle support. Institute and maintain good housekeeping practices. Clean Work Areas as activities proceed. Clear/removed materials and debris from pathways and commonly traveled areas as soon as possible. Three points of contact when enter/exiting equipment or when using stairways/ladders. 	L
	Visible Lighting	<ul style="list-style-type: none"> Perform tasks in daylight hours whenever possible. If dawn, dusk or dark work is to be performed portable lighting must be provided to sufficient illuminate work area(s). 	L
	Other	<ul style="list-style-type: none"> Report all unsafe conditions and acts, injury/illness or property damage to supervisors immediately. 	L
EQUIPMENT REQUIRED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS

ACTIVITY HAZARD ANALYSIS			
1. Contractor: AGVIQ-CH2M HILL Joint Venture (Small Business Remedial Action Contract)		2. Contract Number: N62470-08-D-1006 3. Contract Task Order Number: JM31	
4. Project Location: NAS Key West, Key West, FL		5. Job/Task: Decontamination and Demobilization	
6. Prepared By: Josh Painter	8. Reviewed By:	10. Modified By:	
7. Date Prepared: 5/15/12	9. Date Reviewed:	11. Date Modified:	
12. Personal Protective Clothing and Equipment: Modified Level D1 or D2 PPE D1: Appropriate designated work clothes and applicable to expected weather conditions, reflective vest, hard hat, safety glasses and sturdy hard toed work boots, hearing and Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves. D2: Poly coated or uncoated Tyvek® (or equivalent) chemical resistant disposable coveralls, hard-toe chemically resistant rubber boots, Work gloves (cut resistant) Inner surgical-style nitrile chemical resistant gloves, Hardhat, Safety glasses, Ear protection			
13. Competent Person Requirement: Not Applicable. There is no Competent Person requirement for this task.			Overall RAC: I
14. Competent Person Name: Not Applicable. There is no Competent Person requirement for this task.			
Job Steps	Hazards	Controls	RAC
<ul style="list-style-type: none"> Fire extinguisher (with fuel and electrical sources) Eye wash (small portable type) Miscellaneous power and manual hand tools. First Aid/BbPK/CPR shield Spill Kit Communication devices 	<ul style="list-style-type: none"> Visual Inspections of designated work areas identify and address hazardous conditions. Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.) 	<ul style="list-style-type: none"> Review APP for new site personnel. 1st Aid/CPR 1st Aid/CPR (2 per site when medical attention a medical facility or physician is more than 5 minutes away to two or more employees. Supervisors - BBLPS, SC-HW, 10 hour OSHA Construction Safety Training or equivalent Training and medical surveillance per 29CFR1910.120 	

NOTES (Field Notes, Review Comments, etc.):	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p style="text-align: center; margin: 0;">Overall Risk Assessment Code (RAC) (Use highest code)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="6" style="padding: 5px;">Risk Assessment Code (RAC) Matrix</th> </tr> <tr> <th style="padding: 5px;">Severity</th> <th colspan="5" style="padding: 5px;">Probability</th> </tr> <tr> <th style="padding: 5px;"></th> <th style="padding: 5px;">Frequent</th> <th style="padding: 5px;">Likely</th> <th style="padding: 5px;">Occasional</th> <th style="padding: 5px;">Seldom</th> <th style="padding: 5px;">Unlikely</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Catastrophic</td> <td style="padding: 5px; background-color: red;">E</td> <td style="padding: 5px; background-color: red;">E</td> <td style="padding: 5px; background-color: orange;">H</td> <td style="padding: 5px; background-color: orange;">H</td> <td style="padding: 5px; background-color: yellow;">M</td> </tr> <tr> <td style="padding: 5px;">Critical</td> <td style="padding: 5px; background-color: red;">E</td> <td style="padding: 5px; background-color: orange;">H</td> <td style="padding: 5px; background-color: orange;">H</td> <td style="padding: 5px; background-color: yellow;">M</td> <td style="padding: 5px; background-color: yellow;">L</td> </tr> <tr> <td style="padding: 5px;">Marginal</td> <td style="padding: 5px; background-color: orange;">H</td> <td style="padding: 5px; background-color: yellow;">M</td> <td style="padding: 5px; background-color: yellow;">M</td> <td style="padding: 5px; background-color: lightgreen;">L</td> <td style="padding: 5px; background-color: lightgreen;">L</td> </tr> <tr> <td style="padding: 5px;">Negligible</td> <td style="padding: 5px; background-color: yellow;">M</td> <td style="padding: 5px; background-color: lightgreen;">L</td> <td style="padding: 5px; background-color: lightgreen;">L</td> <td style="padding: 5px; background-color: lightgreen;">L</td> <td style="padding: 5px; background-color: lightgreen;">L</td> </tr> </tbody> </table> <p style="margin: 5px 0;">Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)</p> <p style="margin: 5px 0;">"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.</p> <p style="margin: 5px 0;">"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible.</p> <p style="margin: 5px 0;">Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center; margin-top: 10px;"> <thead> <tr> <th style="padding: 5px;">RAC Chart</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px; background-color: red;">E = Extremely High Risk</td> </tr> <tr> <td style="padding: 5px; background-color: orange;">H = High Risk</td> </tr> <tr> <td style="padding: 5px; background-color: yellow;">M = Moderate Risk</td> </tr> <tr> <td style="padding: 5px; background-color: lightgreen;">L = Low Risk</td> </tr> </tbody> </table> </div> <p style="margin-top: 10px;"> Probability: Likelihood of the hazard to cause a incident, near miss, or accident. <ul style="list-style-type: none"> Frequent - Occurs very often, known to happen regularly Likely - Occurs several times, a common occurrence Occasional - Occurs sporadically, but is not uncommon Seldom - Remotely possible, could occur at some time Unlikely - Can assume will not occur, but not impossible </p> <p style="margin-top: 10px;"> Severity: Outcome/degree of the incident, near miss, or accident. <ul style="list-style-type: none"> Catastrophic - Death or permanent total disability; Major property damage Critical - Permanent partial disability or temporary total disability; Extensive damage to equipment or systems Marginal - Lost workdays due to injury or illness; Minor damage to equipment or systems, property, or the environment Negligible - First aid or minor medical treatment; Slight equipment or system damage, but fully functional or serviceable; Little or no property or environmental damage </p>	Risk Assessment Code (RAC) Matrix						Severity	Probability						Frequent	Likely	Occasional	Seldom	Unlikely	Catastrophic	E	E	H	H	M	Critical	E	H	H	M	L	Marginal	H	M	M	L	L	Negligible	M	L	L	L	L	RAC Chart	E = Extremely High Risk	H = High Risk	M = Moderate Risk	L = Low Risk
Risk Assessment Code (RAC) Matrix																																																
Severity	Probability																																															
	Frequent	Likely	Occasional	Seldom	Unlikely																																											
Catastrophic	E	E	H	H	M																																											
Critical	E	H	H	M	L																																											
Marginal	H	M	M	L	L																																											
Negligible	M	L	L	L	L																																											
RAC Chart																																																
E = Extremely High Risk																																																
H = High Risk																																																
M = Moderate Risk																																																
L = Low Risk																																																

Attachment 1
Accident Prevention Plan Acknowledgement
Form

ACKNOWLEDGEMENT FORM

AGVIQ-CH2M HILL project employees and subcontractors listed below have been provided with a copy of this Health and Safety Plan, have read or been briefed on its contents and agree to abide by its provisions.

Task Order:

[illegible]

Attachment 2

Subcontractor H&S Tracking Form

Subcontractor H&S Tracking Form

Project Name:

Task Number:

Date:

[illegible]

Hazard Specific Training may include Hazard Communication (HAZCOM), asbestos, lead, fall protection, electrical, lock-out tag-out, drilling, demolition, etc.

Equipment Specific Training may include Industrial (fork) truck, aerial lift, crane, portable extinguisher, respirator, scaffolding, etc.

Medical Clearance documents must **not** include actual medical reports. Only accept a signed physician's statement of fitness to work.

Attachment 3
Project H&S Forms/Permits

EQUIPMENT INSPECTION FORM

This form will be used to document AGVIQ-CH2M HILL earthmoving equipment inspections. Earthmoving equipment will be inspected each day and shift prior to use. All components will be inspected for damage and proper operation. Any component failing the inspection will be corrected prior to earthmoving equipment use. Check each box after passing inspection and initial bottom of form each day.

Equipment Name: _____ Identification #: _____ Week of: _____

INSPECTION ITEM	Mon	Tue	Wed	Thu	Fri	Sa	Sun
Visual Checks							
Operating manual – present							
Controls - labeled as to their function, visible and legible, safety latches/guards present							
Tires/tracks – proper inflation/tension, not excessively worn or damaged							
Fluid levels/leaks - engine, transmission, hydraulic, radiator, swing motor and PTO oils.							
Lubrication - to the manufacturer's specifications							
Air filter gauge - gauge is not in the red zone.							
Hydraulics – no fluid leaks, connections tight, hoses, cylinders free of damage.							
Hoses/belts – held securely, not loose or rubbing, no excessive wear or crimping							
Fuel system - tank free of damage, all valves/hoses secure, no leaks							
Body & ground-engaging tools – no damage, cracks, bends, or excessive wear.							
Cylinders/articulation joints– no worn pins, loose connections or other damage.							
Roll-over protective structures (ROPS) - no damage, no cracks or bends							
Seat belt/bar – required unless operator stands or no ROPS							
Handrails, steps, platforms – clean, free from grease, oil, clear of obstructions.							
Cab glass – safety glass, clean, no cracks or visible distortion							
Mirrors – properly adjusted, no cracks or visible distortion							
Windshield wipers, fluid, and defroster - functioning							
Machine guards – present and in good condition							
Fire extinguisher – present and charged							
Operational Checks – check items through normal maneuvers							
Horn & back-up alarm – operating and distinguishable from surrounding noise							
Lights, directional signals, and brake lights - functioning							
Gauges/indicators – visible and working properly							
Operating controls - lift and tilt functioning properly							
Outriggers, if present – functioning properly							
Accelerator - even acceleration, does not stick							
Brakes (service & parking) - brings to complete stop, holds in fixed position							
Steering – responsive, minimal looseness							
Exhaust system – guarded if potential for contact, no signs of sparks/leaks							
Inspector's Initials							



Stop Work Order Form

REPORT PREPARED BY:

Name:	Title:	Signature:	Date:

ISSUE OF NONPERFORMANCE

Description: _____ _____ _____ _____ _____ _____	Date of Nonperformance: _____ _____
---	--

SUBCONTRACTOR SIGNATURE OF NOTIFICATION:

Name:	Title:	Signature:	Date:

** Corrective action is to be taken immediately. Note below the action taken, sign and return to CCI.*

SUBCONTRACTOR'S CORRECTIVE ACTION

Description: _____ _____ _____ _____ _____ _____	Date of Corrective Actions: _____ _____
---	--

SUBCONTRACTOR SIGNATURE OF CORRECTION:

Name:	Title:	Signature:	Date:

Attachment 4
Emergency Contact List

Emergency Contact List

24-hour CH2M HILL Serious Incident Reporting Contact/Pager: 720-286-4911

CH2M HILL 24-hour Nurse Number: 866-893-2514

<p>Hospital #: (305) 294-5531</p> <p>Fire/Spill Emergency: Quarterdeck (305) 293 2268 first, then 911 if necessary Local Fire Dept #: (305) 392-8145 Base Fire Dept: (305) 293 3333 (They will contact outside resources if necessary)</p> <p>Base Security & Police: (305) 293-2531 or 911 Local Police Dept #: (305) 809-1111</p> <p>Utilities Emergency Water/Gas/Electric/Cable/Telephone: Contact Florida Sunshine One Call (800) 432-4770</p>	<p>CH2M HIL- Medical Consultant WorkCare Dr. Peter Greaney M.D. 300 S. Harbor Blvd, Suite 600 Anaheim , CA 92805 800-455-6155 714-978-7488 (After hours calls will be returned within 20 minutes)</p> <p>AGVIQ Medical Consultant(s) Refer to AQVIQ VBO office for a detailed list of Medical Facilities/contacts.</p>
<p>AGVIQ-CH2M HILL SBRAC Program Manager Name: Sidney Allison AGVIQ Phone 843-242-8018 (o); 843-813-2672 (cell)</p>	<p>AGVIQ-CH2M HILL Deputy Program Manager Name: Michael Halil CH2M HILL – (JXO) Phone: 904-777-4812 x 233/904-219-6277 (cell)</p>
<p>NAVFAC Facility Engineering & Acquisition Division: Mel Herlehy (305) 797-1648</p>	<p>AGVIQ-CH2M HILL Project Manager (overall) Name: Amy Twitty CH2M HILL Phone: (850) 232-0320 (cell)</p>
<p>AGVIQ-CH2M HILL Site Supervisor Name: TBD Cell Phone:</p> <p>AGVIQ-CH2M HILL FTL/SSHO Name: Nicole Monroe Phone: (504) 473-1399</p>	<p>AGVIQ-CH2M HILL Program CIH Name: Angelo Liberatore, CH2M HILL Constructors, Inc. (ATL) Phone: (678) 530-4210 /(770) 335-2076 (cell)</p> <p>AGVIQ-CH2M HILL Program HSPA Name: Mark Orman, CH2M HILL Constructors, Inc. (MKE) Phone: (414) 847-0597/(414) 712-4138 (Cell)</p> <p>AGVIQ-CH2M HILL Program HSPA Name: Josh Painter Cell Phone: (303) 993-9274</p>
<p>AGVIQ Corporate Human Resources Department & AGVIQ Worker's Compensation & Auto Claims</p> <p>Name: Sabrina Ben TIKIGAQ Corp. Anchorage, AK Phone: (907) 365 6129/ (907) 341-6139 (fax)</p> <p>AGVIQ personnel to report all accidents or injuries to AGVIQ Corporate HSM or HSO immediately but no later than 24 hrs. Fatalities and hospitalizations shall require immediate notification to AGVIQ Corporate HSM.</p>	<p>CH2M HILL Corporate Human Resources Department Name: Pete Hannon, DEN Phone: 303-771-0900</p> <p>CH2M HILL Worker's Compensation and Auto Claims Sterling Administration Services Phone: 800/420-8926 After hours: 800/497-4566</p> <p>Report fatalities AND report vehicular accidents involving pedestrians, motorcycles, or more than two cars. Fatalities and hospitalizations shall require immediate notification to AGVIQ-CH2M HILL Program Management/ CIH.</p>
<p>AGVIQ Corporate HSM Name: Troy Izatt Office phone # (907) 365-6182 Cell phone # (907) 748-3697</p>	<p>Federal Express Dangerous Goods Shipping Phone: 800/238-5355</p> <p>Emergency Number for Shipping Dangerous Goods Phone: 800/255-3924</p>
<p>Hospital Name/Address: See Figure 9-2 of this APP for Directions Lower Florida Keys Medical Center (305) 294-5531 5900 College Rd. Key West, FL 33040</p>	
<p>Evacuation Route: See Figure 9-2 of this APP for the Evacuation Route Map Details</p> <p>Incident Reporting: Contact the Project Manager (overall). Generally, the Project Manager will contact relevant client officials unless otherwise directed by the Program Manager. Refer to Figure 4-1 "AGVIQ-CH2M HILL Incident Notification and Chain of Command" of the APP.</p>	

Attachment 5
Material Safety Data Sheets
(provided onsite as materials are delivered)

Attachment 6
Chemical Specific Training Form and
Project Specific Chemical
Product Hazard Communication Form

CHEMICAL-SPECIFIC TRAINING FORM

Location:	Task Order:
SSHO:	Trainer:

TRAINING PARTICIPANTS:

NAME	SIGNATURE	NAME	SIGNATURE

REGULATED PRODUCTS/TASKS COVERED BY THIS TRAINING:

The SSC will use the product MSDS to provide the following information concerning each of the products listed above.

- ☐ Physical and health hazards
- ☐ Control measures that can be used to provide protection (including appropriate work practices, emergency procedures, and personal protective equipment to be used)
- ☐ Methods and observations used to detect the presence or release of the regulated product in the workplace (including periodic monitoring, continuous monitoring devices, visual appearance or odor of regulated product when being released, etc.)

Training participants will have the opportunity to ask questions concerning these products and, upon completion of this training, will understand the product hazards and appropriate control measures available for their protection.

Copies of MSDSs, chemical inventories, and the written hazard communication program will be made available for employee review in the facility/project hazard communication file.

Project-Specific Chemical Product Hazard Communication Form

Project Name:	Task Order:
MSDSs will be maintained at the following location(s):	

MSDSs will be maintained at the following location(s):

MSDSs will be maintained at the following location(s):

Hazardous Chemical Products Inventory									
---------------------------------------	--	--	--	--	--	--	--	--	--

				Container labels
--	--	--	--	------------------

[illegible]

Refer to SOP HS-107 Hazard Communication for more detailed information.

Attachment 7

Pre-Task Safety Plan



EXAMPLE ONLY

DAILY PRE-TASK SAFETY PLAN (PTSP)

Page 1 of 3

Project: _____			Location: _____			Date: _____		
Site Safety & Health Officer: _____			Job Activity: _____			Site #: _____		
Task Personnel:								

List Tasks:								

Tools/Equipment/Materials required (ladders, scaffolds, fall protection, cranes/rigging, heavy equipment, power tools, cords, generators, compressed gases, regulated chemical products, etc.):								

Potential H&S Hazards, including chemical, physical, safety, biological and environmental (Check all that apply):								
<input checked="" type="checkbox"/> Chemical burns/contact Dermal protection (hands), eye protection. See APP for PPE requirements per task.			<input type="checkbox"/> Trench, excavations, cave-ins			<input type="checkbox"/> Ergonomics		
<input type="checkbox"/> Pressurized lines/equipment			<input checked="" type="checkbox"/> Overexertion Work/break regiment as dictated by task. Maintain fluid intake for hydration			<input checked="" type="checkbox"/> Chemical splash Use PPE in accordance with the APP. Protect hands from splash during decon. activities.		
<input checked="" type="checkbox"/> Thermal burns Watch for warm engine/muffler components on generators.			<input type="checkbox"/> Pinch points			<input checked="" type="checkbox"/> Poisonous plants/insects Review APP for identification of poisonous snakes in the geographic area. Long sleeves in areas where poison ivy, sumac or oak may exist. Use insect repellent. Tape pant legs to boots (ticks).		
<input checked="" type="checkbox"/> Electrical GCFIs for generators, inspect. & protect extension cords, cords rated for use & have 3 rd wire grounding			<input checked="" type="checkbox"/> Cuts/abrasions Do not use razor knives. Cut away from body. Identify and avoid rusty/jagged or sharp surfaces from above ground features (brush, pipe chases/supports, utility structures, doors)			<input checked="" type="checkbox"/> Eye hazards/flying projectile Use eye protection at all times. Ensure head protection is used in areas where heavy brush, trees, thorns, vines exist when accessing well heads.		
<input type="checkbox"/> Weather conditions Foul and cold weather clothing as dictated by expected conditions			<input checked="" type="checkbox"/> Spills Use funnels & nozzles during fueling of generators.			<input type="checkbox"/> Inhalation hazard		
<input type="checkbox"/> Heights/fall > 6'			<input type="checkbox"/> Overhead Electrical hazards			<input checked="" type="checkbox"/> Heat/cold stress Work/break regiment as dictated by heat exposure. Provide sufficient fluids for employee intake. Recommended employees begin with 16 oz. of water before initiating field work.		
<input checked="" type="checkbox"/> Noise Use hear protection in loud work environments			<input type="checkbox"/> Elevated loads			<input type="checkbox"/> Water/drowning hazard		
<input checked="" type="checkbox"/> Explosion/fire Metal safety cans for fuel storage, No open flame, sparks ignition in hazardous/flammable/combustible storage areas. Let engine surfaces cool before fueling.			<input checked="" type="checkbox"/> Slips, trip and falls Exercise good general housekeeping practices. Identify/remove slip/trip falls hazards in work area. Watch for and avoid holes, ground protrusions. Watch for entanglement of feet around vines and brush.			<input type="checkbox"/> Heavy equipment		
<input checked="" type="checkbox"/> Radiation Solar. UV protection on skin and UV eye protection. ANSI rated safety eye protection only.			<input checked="" type="checkbox"/> Manual lifting >50 lbs or awkward loads, get assistance. If employee not capable of lifting 40 lbs. seek assistance.			<input type="checkbox"/> Aerial lifts/platforms		
<input type="checkbox"/> Confined space entry			<input type="checkbox"/> Welding/cutting			<input type="checkbox"/> Demolition		
Continue on page 3 of 3 (if necessary)								

DAILY PRE-TASK SAFETY PLAN (PTSP)			Page 2 of 3
Hazard Control Measures (Check all that apply):			
PPE <input checked="" type="checkbox"/> Head protection <input type="checkbox"/> Face protection <input checked="" type="checkbox"/> Hard toe work boots <input type="checkbox"/> Thermal/lined <input checked="" type="checkbox"/> Eye <input checked="" type="checkbox"/> Dermal/hand <input type="checkbox"/> Hearing <input type="checkbox"/> Respiratory <input checked="" type="checkbox"/> Reflective vests	Protective Systems <input type="checkbox"/> Locate buried utilities <input type="checkbox"/> Competent person <input type="checkbox"/> Daily inspections <input type="checkbox"/> Sloping <input type="checkbox"/> Shoring <input type="checkbox"/> Trench box <input type="checkbox"/> Barricades	Fire Protection <input type="checkbox"/> Fire extinguishers <input type="checkbox"/> Fire watch <input type="checkbox"/> Non-spark tools <input type="checkbox"/> Grounding/bonding <input type="checkbox"/> Intrinsically safe equipment <input type="checkbox"/> Combustible materials storage <input type="checkbox"/> Chemical Storage	Electrical <input type="checkbox"/> Lockout/tagout <input type="checkbox"/> Grounded <input type="checkbox"/> Panels covered <input checked="" type="checkbox"/> GFCI/extension cords <input type="checkbox"/> Power tools/cord inspected <input type="checkbox"/> Insulated tools/gloves
Fall Protection <input type="checkbox"/> Harness/lanyards <input type="checkbox"/> Adequate anchorage <input type="checkbox"/> Guardrail system <input type="checkbox"/> Covered opening <input type="checkbox"/> Fixed barricades <input type="checkbox"/> Warning system	Air Monitoring <input type="checkbox"/> PID/FID <input type="checkbox"/> Detector tubes <input type="checkbox"/> Radiation <input type="checkbox"/> Personnel sampling <input type="checkbox"/> LEL/O2 <input type="checkbox"/> Other	Proper Equipment <input type="checkbox"/> Aerial lift/ladders/scaffolds <input type="checkbox"/> Forklift/ Heavy equipment <input type="checkbox"/> Backup alarms <input type="checkbox"/> Hand/power tools <input type="checkbox"/> Crane w/current inspection <input type="checkbox"/> Proper rigging <input type="checkbox"/> Operator qualified	Welding & Cutting <input type="checkbox"/> Cylinders secured/capped <input type="checkbox"/> Cylinders separated/upright <input type="checkbox"/> Flash-back arrestors <input type="checkbox"/> No cylinders in CSE <input type="checkbox"/> Flame retardant clothing <input type="checkbox"/> Appropriate goggles
Confined Space Entry <input type="checkbox"/> Isolation <input type="checkbox"/> Air monitoring <input type="checkbox"/> Trained personnel <input type="checkbox"/> Permit completed <input type="checkbox"/> Rescue provisions	Medical/Emerg. Response <input checked="" type="checkbox"/> First-aid & BBP kit <input checked="" type="checkbox"/> Eye wash <input checked="" type="checkbox"/> FA-CPR training <input checked="" type="checkbox"/> Route to hospital	Heat/Cold Stress <input checked="" type="checkbox"/> Work/rest regime <input checked="" type="checkbox"/> Rest area <input checked="" type="checkbox"/> Liquids available <input checked="" type="checkbox"/> Monitoring <input type="checkbox"/> Training	Vehicle/Traffic <input type="checkbox"/> Traffic Awareness <input type="checkbox"/> Traffic control <input type="checkbox"/> Barricades <input type="checkbox"/> Flags <input type="checkbox"/> Signs
Permits <input type="checkbox"/> Hot work <input type="checkbox"/> Confined space <input type="checkbox"/> Lockout/tagout <input type="checkbox"/> Excavation <input type="checkbox"/> Demolition <input type="checkbox"/> Energized work <input type="checkbox"/> Local/Environmental	Demolition <input type="checkbox"/> Pre-demolition survey <input type="checkbox"/> Structure condition <input type="checkbox"/> Isolate area/utilities <input type="checkbox"/> Competent person <input type="checkbox"/> Hazmat present	Inspections <input type="checkbox"/> Ladders/aerial lifts <input type="checkbox"/> Lanyards/harness <input type="checkbox"/> Scaffolds <input type="checkbox"/> Heavy equipment <input type="checkbox"/> Cranes and rigging <input type="checkbox"/> Other per Field Safety Plan	Training <input checked="" type="checkbox"/> Hazwaste <input type="checkbox"/> Construction <input type="checkbox"/> Equipment <input type="checkbox"/> Competent person <input checked="" type="checkbox"/> Task-specific (AHA) <input checked="" type="checkbox"/> Hazcom
Field Notes: <hr/> <hr/> <hr/>			

DAILY PRE-TASK SAFETY PLAN (PTSP)
Page 3 of 3

Additional Space for Project Specific Hazard Awareness (if necessary):

- 1) Observe government/military facility posted speed limits.
- 2) Wear seat belts in vehicles while on government/military facilities.
- 3) Do not use cell phones or two way radios while driving or actively operating equipment on government/military facilities.
- 4) Failure to do so may result in loss of driving privileges on government/military facilities.
- 5) Report all accidents/injuries and property damage to the Project Manager and Program CIH immediately.
- 6) Maintain hospital route maps in site vehicles. Know facility EMS, Fire and Security dispatch #s.
- 7) Secure any loads to hauling vehicle (pick-up truck) with appropriate rated tie down straps.
- 8) Use reflective vests/ high visibility clothing in high traffic areas or in areas were material handling operations are occurring.

Attendees:

Name (Printed):


Signature:

Meeting Conducted By:

Name Printed

Signature

Attachment 8
Loss Prevention Observation Form

Loss Prevention Observation Form			
Project:	Observer:		
Position/Title of worker observed:	Background Information/comments:		
Task/Observation Observed:	Date:		
<ul style="list-style-type: none"> Identify and reinforce safe work practices/behaviors Identify and improve on at-risk practices/acts Identify and improve on practices, conditions, controls, and compliance that eliminate or reduce hazards Proactive PM/Site Manager support facilitates eliminating/reducing hazards (material/personnel resources) Positive, corrective, cooperative, collaborative feedback/recommendations 			
Actions & Behaviors	Consistent w/ H&S Program	Not Consistent w/ H&S Program	Observations/Comments
Current & accurate Pre-Task Planning/Briefing (Project safety plan, AHA, PTSP, tailgate briefing, c., as needed)			Positive Work Practices Observed:
Personnel properly trained/qualified/experienced			
Tools/equipment available and adequate			
Proper use of tools			Questionable Activity/Condition Observed:
Barricades/work zone control			
Housekeeping			
Communication			
Work Approach/Habits			
Attitude			Actions/Comments:
Focus/attentiveness			
Pace			
Uncomfortable position			
Inconvenient location			
Position/Line of fire			
Apparel (hair, loose clothing, jewelry)			
Repetitive motion			Observed Worker's Corrective Actions/Comments:
Other...			

Safety and Occupational Health Deficiency Tracking Log						
Item	Date Identified	Identified By	Deficiency Description	Resolution Date	Corrected By	Actual Correction Date
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Attachment 9
Loss/Near Loss Incident Report Form

Incident Report Form

Type of Incident (Select at least one)

- | | | |
|---|--|--|
| <input type="checkbox"/> Injury/Illness | <input type="checkbox"/> Property Damage | <input type="checkbox"/> Spill/Release |
| <input type="checkbox"/> Environmental/Permit Issue | <input type="checkbox"/> Near Miss | <input type="checkbox"/> Other |

General Information (Complete for all incident types)

Preparer's Name: _____ Preparer's Employee Number: _____
 Date of Report: _____ Date of Incident: _____ Time of Incident: _____ am/pm

Type of Activity (Provide activity being performed that resulted in the incident)

- | | | |
|--|--|--|
| <input type="checkbox"/> Asbestos Work | <input type="checkbox"/> Excavation Trench-Haz Waste | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Confined Space Entry | <input type="checkbox"/> Excavation Trench-Non Haz | |
| <input type="checkbox"/> Construction Mgmt- Haz Waste | <input type="checkbox"/> Facility Walk Through | <input type="checkbox"/> Process Safety Management |
| <input type="checkbox"/> Construction Mgmt - Non-Haz Waste | <input type="checkbox"/> General Office Work | <input type="checkbox"/> Tunneling |
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Keyboard Work | <input type="checkbox"/> Welding |
| <input type="checkbox"/> Drilling-Haz Waste | <input type="checkbox"/> Laboratory | <input type="checkbox"/> Wetlands Survey |
| <input type="checkbox"/> Drilling-Non Haz Waste | <input type="checkbox"/> Lead Abatement | <input type="checkbox"/> Working from Heights |
| <input type="checkbox"/> Drum Handling | <input type="checkbox"/> Motor Vehicle Operation | <input type="checkbox"/> Working in Roadways |
| <input type="checkbox"/> Electrical Work | <input type="checkbox"/> Moving Heavy Object | <input type="checkbox"/> WWTP Operation |

Location of Incident (Select one)

- ☐ Company Premises (JVI Office: _____)
- ☐ Field (Project #: _____ Project/Site Name: _____ Client: _____)
- ☐ In Transit (Traveling from: _____ Traveling to: _____)
- ☐ At Home

Geographic Location of Incident (Select region where the incident occurred)

- | | | |
|------------------------------------|------------------------------------|---|
| <input type="checkbox"/> Northeast | <input type="checkbox"/> Southwest | <input type="checkbox"/> Asia Pacific |
| <input type="checkbox"/> Southeast | <input type="checkbox"/> Corporate | <input type="checkbox"/> Europe Middle East |
| <input type="checkbox"/> Northwest | <input type="checkbox"/> Canadian | <input type="checkbox"/> Latin America |

If an AGVIQ-CH2M HILL subcontractor was involved in the incident, provide their company name and phone number:

Describe the Incident (Provide a brief description of the incident): _____

Injured Employee Data (Complete for Injury/Illness incidents only)

If AGVIQ-CH2M HILL employee injured

Employee Name: _____ Employee Number: _____

If AGVIQ-CH2M HILL Subcontractor employee injured

Employee Name: _____ Company: _____

Injury Type

- | | | |
|--|--|---|
| <input type="checkbox"/> Allergic Reaction | <input type="checkbox"/> Electric Shock | <input type="checkbox"/> Multiple (Specify) _____ |
| <input type="checkbox"/> Amputation | <input type="checkbox"/> Foreign Body in eye | <input type="checkbox"/> Muscle Spasms |
| <input type="checkbox"/> Asphyxia | <input type="checkbox"/> Fracture | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Bruise/Contusion/Abrasion | <input type="checkbox"/> Freezing/Frost Bite | |
| <input type="checkbox"/> Burn (Chemical) | <input type="checkbox"/> Headache | |
| <input type="checkbox"/> Burn/Scald (Heat) | <input type="checkbox"/> Hearing Loss | <input type="checkbox"/> Poisoning (Systemic) |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Heat Exhaustion | <input type="checkbox"/> Puncture |
| <input type="checkbox"/> Carpal Tunnel | <input type="checkbox"/> Hernia | <input type="checkbox"/> Radiation Effects |
| <input type="checkbox"/> Concussion | <input type="checkbox"/> Infection | <input type="checkbox"/> Strain/Sprain |
| <input type="checkbox"/> Cut/Laceration | <input type="checkbox"/> Irritation to eye | <input type="checkbox"/> Tendonitis |
| <input type="checkbox"/> Dermatitis | <input type="checkbox"/> Ligament Damage | <input type="checkbox"/> Wrist Pain |
| <input type="checkbox"/> Dislocation | | |

Part of Body Injured

- | | | |
|--|---------------------------------------|---|
| <input type="checkbox"/> Abdomen | <input type="checkbox"/> Foot/Feet | <input type="checkbox"/> Multiple (Specify) _____ |
| <input type="checkbox"/> Ankle(s) | <input type="checkbox"/> Hand(s) | <input type="checkbox"/> Neck |
| <input type="checkbox"/> Arms (Multiple) | <input type="checkbox"/> Head | <input type="checkbox"/> Nervous System |
| <input type="checkbox"/> Back | <input type="checkbox"/> Hip(s) | <input type="checkbox"/> Nose |
| <input type="checkbox"/> Blood | <input type="checkbox"/> Kidney | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Body System | <input type="checkbox"/> Knee(s) | |
| <input type="checkbox"/> Buttocks | <input type="checkbox"/> Leg(s) | <input type="checkbox"/> Reproductive System |
| <input type="checkbox"/> Chest/Ribs | <input type="checkbox"/> Liver | <input type="checkbox"/> Shoulder(s) |
| <input type="checkbox"/> Ear(s) | <input type="checkbox"/> Lower (arms) | <input type="checkbox"/> Throat |
| <input type="checkbox"/> Elbow(s) | <input type="checkbox"/> Lower (legs) | <input type="checkbox"/> Toe(s) |
| <input type="checkbox"/> Eye(s) | <input type="checkbox"/> Lung | <input type="checkbox"/> Upper Arm(s) |
| <input type="checkbox"/> Face | <input type="checkbox"/> Mind | <input type="checkbox"/> Upper Leg(s) |
| <input type="checkbox"/> Finger(s) | | <input type="checkbox"/> Wrist(s) |

Nature of Injury

- | | | |
|--|---|---|
| <input type="checkbox"/> Absorption | <input type="checkbox"/> Inhalation | <input type="checkbox"/> Overexertion |
| <input type="checkbox"/> Bite/Sting/Scratch | <input type="checkbox"/> Lifting | <input type="checkbox"/> Repeated Motion/Pressure |
| <input type="checkbox"/> Cardio-Vascular/Respiratory | <input type="checkbox"/> Mental Stress | <input type="checkbox"/> Rubbed/Abraded |
| System Failure | <input type="checkbox"/> Motor Vehicle Accident | <input type="checkbox"/> Shock |
| <input type="checkbox"/> Caught In or Between | <input type="checkbox"/> Multiple (Specify) _____ | <input type="checkbox"/> Struck Against |
| <input type="checkbox"/> Fall (From Elevation) | | <input type="checkbox"/> Struck By |
| <input type="checkbox"/> Fall (Same Level) | <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Work Place Violence |
| <input type="checkbox"/> Ingestion | | |

- Initial Diagnosis/Treatment Date: _____

Type of Treatment

- | | |
|---|---|
| <input type="checkbox"/> Admission to hospital/medical facility | <input type="checkbox"/> Soaking therapy- Multiple Treatment |
| <input type="checkbox"/> Application of bandages | <input type="checkbox"/> Soaking Therapy- One Treatment |
| <input type="checkbox"/> Cold/Heat Compression/Multiple Treatment | <input type="checkbox"/> Stitches/Sutures |
| <input type="checkbox"/> Cold/Heat Compression/One Treatment | <input type="checkbox"/> Tetanus |
| <input type="checkbox"/> First Degree Burn Treatment | <input type="checkbox"/> Treatment for infection |
| <input type="checkbox"/> Heat Therapy/Multiple treatment | <input type="checkbox"/> Treatment of 2 nd /3 rd degree burns |
| <input type="checkbox"/> Multiple (Specify) _____ | <input type="checkbox"/> Use of Antiseptics - multiple treatment |
| | <input type="checkbox"/> Use of Antiseptics - single treatment |
| <input type="checkbox"/> Heat Therapy/One Treatment | <input type="checkbox"/> Whirlpool bath therapy/multiple treatment |
| <input type="checkbox"/> Non-Prescriptive medicine | <input type="checkbox"/> Whirlpool bath therapy/single treatment |
| <input type="checkbox"/> None | <input type="checkbox"/> X-rays negative |
| <input type="checkbox"/> Observation | <input type="checkbox"/> X-rays positive/treatment of fracture |
| <input type="checkbox"/> Other (Specify) _____ | |
| | |
| <input type="checkbox"/> Prescription- Multiple dose | |
| <input type="checkbox"/> Prescription- Single dose | |
| <input type="checkbox"/> Removal of foreign bodies | |
| <input type="checkbox"/> Skin Removal | |

Number of days doctor required employee to be off work: _____

Number of days doctor restricted employee's work activity: _____

Equipment Malfunction: Yes ☐ No ☐ Activity was a Routine Task: Yes ☐ No ☐

Describe how you may have prevented this injury:

Physician Information

Name: _____
Address: _____
City: _____
Zip Code: _____
Phone: _____

Hospital Information

Name: _____
Address: _____
City: _____
Zip Code: _____
Phone: _____

Property Damage (Complete for Property Damage incidents only)

Property Damaged: _____ Property Owner: _____

Damage Description: _____

Estimated Amount: \$ _____

Spill or Release (Complete for Spill/Release incidents only)

Substance (attach MSDS): _____ Estimated Quantity: _____

Facility Name, Address, Phone No.: _____

Did the spill/release move off the property where work was performed?: _____

Spill/Release From: _____ Spill/Release To: _____

Environmental/Permit Issue (Complete for Environmental/Permit Issue incidents only)

Describe Environmental or Permit Issue:

Permit Type: _____

Permitted Level or Criteria (e.g., discharge limit): _____

Permit Name and Number (e.g., NPDES No. ST1234): _____

Substance and Estimated Quantity: _____

Duration of Permit Exceedance: _____

Verbal Notification (Complete for all incident types)(Provide names, dates and times)

AGVIQ-CH2M HILL Personnel Notified: _____

Client Notified: _____

Root Cause Investigation

This attachment is provided to assist in accessing, completing, and reviewing an incident investigation. It is important to remember the following when conducting an investigation:

Gather relevant facts, focusing on fact-finding, not fault-finding.
Draw conclusions, pitting facts together into a probable scenario.
Determine incident root cause(s), the basic causes why an unsafe act/condition existed.
Develop and implement solutions, matching all identified root causes with solutions.

Documentation

The following should be included in the Incident Report Form (IRF) to document the incident.

Description

Provide a description of the event and the sequence of events and actions that took place prior to the incident. Start with the incident event and work backwards in time through all of the preceding events that directly contributed to the incident. The information should identify why the event took place as well as who was involved, when and where the event took place, and what actions were taken.

Cause Analysis

Using the form and flowchart in this attachment the root cause of the incident will be determined. This form must be retained in the project and/or regional HS&E files.

Immediate Causes—List the substandard actions or conditions that directly affected the incident. The following are examples of immediate causes:

Substandard Actions: Operating equipment without authority; failure to warn; failure to secure; operating at improper speed; making safety device inoperable; using defective equipment; failing to use PPE; improper loading; improper lifting; improper position for task; under influence of alcohol or drugs; horseplay.

Substandard Conditions: Exposure to hazardous materials; exposure to extreme temperatures; improper lighting; improper ventilation; congestion; exposure to fire and explosive hazard; defective tools, equipment or materials; exposure to extreme noise; poor ventilation; poor visibility; poor housekeeping.

Basic Causes—List the personal and job factors that caused the incident. The following are examples of basic causes:

Personal Factors: Capability; knowledge; skill; stress; motivation.

Job Factors: Abuse or misuse; engineering; maintenance; purchasing; supervision; tools and equipment; wear and tear; work standards.

Corrective Action Plan

Include all corrective actions taken or those that should be taken to prevent recurrence of the incident. Include the specific actions to be taken, the employer and personnel responsible for implementing the actions, and a time frame for completion. Be sure the corrective actions address the causes. For example, training may prevent recurrence of an incident caused by a lack of knowledge, but it may not help an incident caused by improper motivation.

The following are examples of management programs that may be used to control future incidents. These programs should be considered when determining specific corrective actions.

Management Programs: Accident/incident analysis; emergency preparedness; engineering controls; general promotion; group meetings; health control; hiring and placement; leadership and administration; management training; organizational rules; personal protective equipment; planned inspections; program audits; program controls; purchasing controls; task analysis and procedures; task observation.

Describe how this incident may have been prevented:

Contributing Factors (Describe in detail why incident occurred):

Date employer notified of incident: _____ To whom reported: _____

Witness Information (First Witness)

Name: _____
Employee Number _____
Address: _____
City: _____
Zip Code : _____
Phone: _____

Witness Information (Second Witness)

Name: _____
Employee Number _____
Address: _____
City: _____
Zip Code : _____
Phone: _____

Additional information or
comments: _____

A ROOT CAUSE ANALYSIS FORM MUST BE COMPLETED FOR ALL INJURIES AND ILLNESSES OR ACTUAL LOSSES.

COMPLETION OF THE ROOT CAUSE ANALYSIS FORM FOR NEAR LOSSES IS OPTIONAL, AT THE DISCRETION OF THE HEALTH AND SAFETY MANAGER.

Determination of Root Cause(s)

For losses or near losses the information may be gathered by the supervisor or other personnel immediately following the loss or near loss. Based on the complexity of the situation, this information may be all that is necessary to enable the investigation team to analyze the loss, to determine the root cause, and to develop recommendations. More complex situations may require the investigation team to revisit the loss site or re-interview key witnesses to obtain answers to questions that may arise during the investigation process.

Photographs or videotapes of the scene and damaged equipment should be taken from all sides and from various distances. This point is especially important when the investigation team will not be able to review the loss scene.

The investigation team must use the Root Cause Analysis Flow Chart to assist in identifying the root cause(s) of a loss. Any loss may have one or more "root causes" and "contributing factors". The "root cause" is the primary or immediate cause of the incident, while a "contributing factor" is a condition or event that contributes to the incident happening, but is not the primary cause of the incident. Root causes and contributing factors that relate to the *person* involved in the loss, his or her peers, or the supervisor should be referred to as "personal factors". Causes that pertain to the *system* within which the loss or injury occurred should be referred to as "job factors".

Personal Factors

1. Lack of skill or knowledge, lack of motivation
5. Correct way takes more time and/or requires more effort
6. Short-cutting standard procedures is positively reinforced or tolerated
7. Person thinks that there is no personal benefit to always doing the job according to standards

Job Factors

2. Lack of or inadequate operational procedures or work standards.
3. Inadequate communication of expectations regarding procedures or standards
4. Inadequate tools or equipment

Other

8. Uncontrollable Factors *

The root cause(s) could be any one or a combination of these seven possibilities or some other "uncontrollable factor". In the vast majority of losses, the root cause is very much related to one or more of these seven factors. * **Uncontrollable factors should be used rarely and only after a thorough review eliminates "all" seven other factors.**

Root Cause Analysis Form

Root Cause Analysis (RCA)

Root Cause Categories (RCC): Select the RCC numbered below that applies for the root cause (RC) and/or contributing factor (CF) in the first column, then describe the specific root cause and corrective actions in each column.

1. Lack of skill or knowledge
2. Lack of or inadequate operational procedures or work standards
3. Inadequate communication of expectations regarding procedures or work standards
4. Inadequate tools or equipment
5. Correct way takes more time and/or requires more effort
6. Short-cutting standard procedures is positively reinforced or tolerated
7. Person thinks there is no personal benefit to always doing the job according to standards
8. Uncontrollable Factor (Note: Uncontrollable factors should be used rarely and only after a thorough review eliminates "all" seven other factors.)

RCC #	Root Cause(s)	Corrective Actions	RC ¹	CF ²	Due Date	Completion Date	Date Verified

¹ RC = Root Cause; ² CF = Contributing Factors (check which applies)

Investigation Team Members

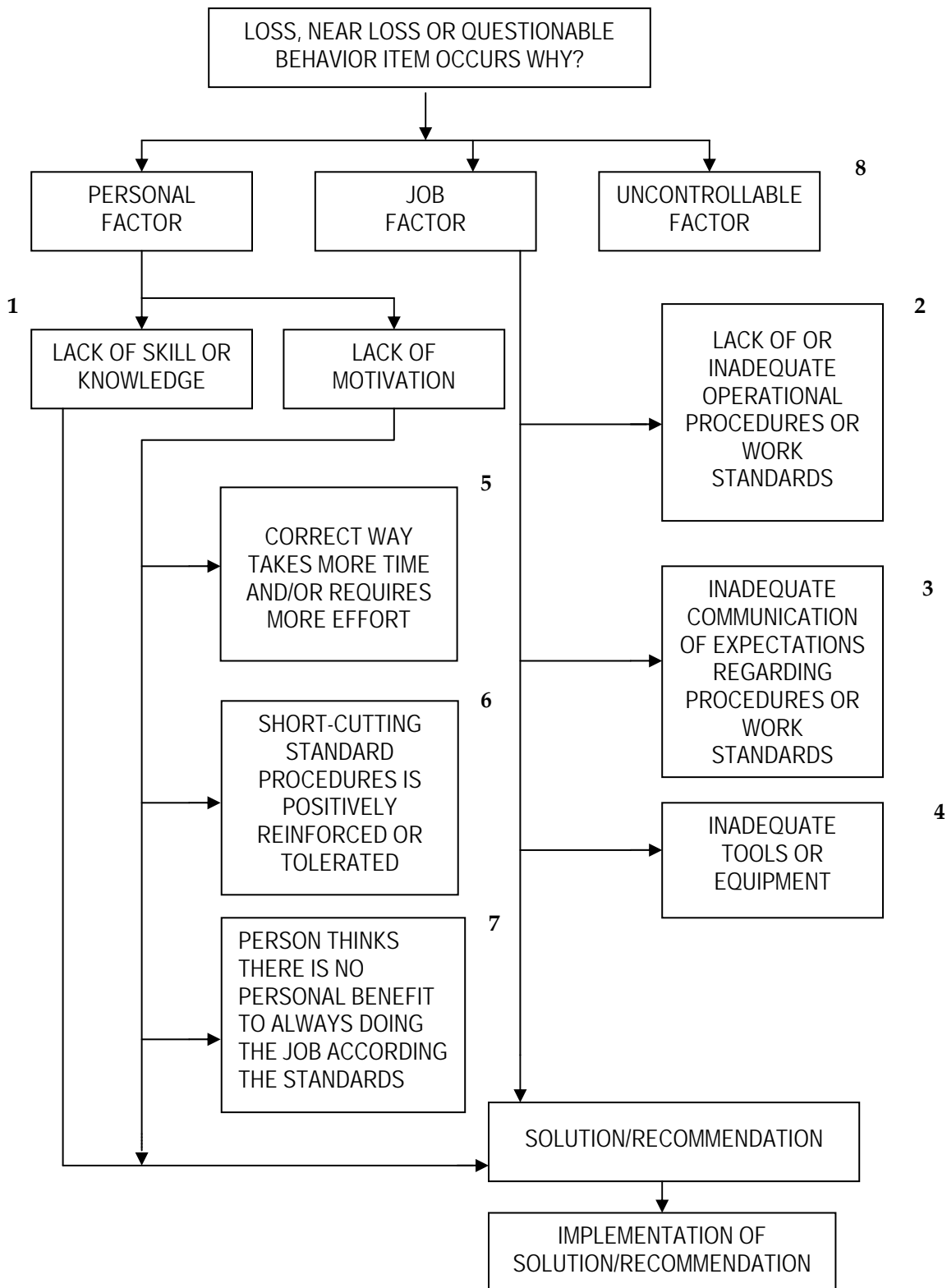
Name	Job Title	Date

Results of Solution Verification and Validation

Reviewed By

Name	Job Title	Date

Root Cause Analysis Flow Chart



Emergency Nurse Assistance Instructions (CH2M HILL personnel only)

- After informing their supervisor (AGVIQ-CH2M HILL Project Manager and/or AGVIQ-CH2M HILL Deputy Program Manager), the injured employee calls CH2M HILL's contracted Occupational Nurse.
- 24-hour CH2M HILL Emergency Nurse Assistance
- 1-866-893-2514
- The Occupational Injury Nurse listens to the injured employee to understand the injury/illness.
- Employee is provided guidance on appropriate treatment options (triage).
- If instructed to visit a medical facility by the Occupational Injury Nurse, the Supervisor is responsible for instructing the injured employee to take a copy of the **CH2M HILL Initial Medical Treatment Form (Attachment 9- For Use by CH2M HILL Personnel Only)** with them to the physician, clinic or hospital.
- Appropriate treatment details are handled by the Occupational Injury Nurse, and Workers Compensation Groups.
- Nurse communicates and troubleshoots with and for employee through full recovery
- Upon any project incident (fire, spill, injury, near miss, death, etc.), immediately notify the AGVIQ-CH2M HILL PM (overall) and AGVIQ-CH2M HILL Program Manager, Project Manager and CIH/HSPA.
- For work-related injuries or illnesses to CH2M HILL personnel, contact and help Human Resources administrator complete a Hours and Incident Tracking System (HITS) Form. HITS must be completed within 24 hours of incident.

For AGVIQ-CH2M HILL subcontractor incidents, complete the incident report form (IRF), Near Loss Investigation Report and Root Cause Analysis and submit to the AGVIQ-CH2M HILL PM and CIH/HSPA.

To be completed by CH2M HILL Supervisor – Send with employee visiting medical facility or forward within 24 hours.

Employee name: _____ Date of Injury: _____

Supervisor: _____ HS

Representative: _____

Visit Authorized by: _____ Phone #: _____

CH2M HILL Workers Compensation Administrator: Cambridge

Send Bills to: CH2M HILL

Attn: Jennifer Rindahl

P.O. Box 22508

Denver, Colorado 80222-0508

To be completed by medical provider:

Physician's name: _____ Phone #: _____

Address: _____

CH2M HILL employee: _____ has been treated for: _____

It is the policy of CH2M HILL to provide temporary modified duty whenever possible for employees with physical restrictions resulting from an occupational injury or illness.

Released to full duty

Released to restricted duty only (list restrictions below)

Out of work until _____ (date)

Please list any physical restrictions:

Expected duration of restricted duty?

CH2M HILL would like the best and most efficient care extended to all our employees. Please recommend over-the-counter (OTC) medication as a suitable alternative when medically feasible.

Prescribed medication: _____

Recommended OTC alternative: _____

Date of follow-up appointment: _____

Physician's signature: _____ Date: _____

Please return this form to the injured employee and FAX to Health Resources at 1-800-853-2641. If you want to discuss the employee's work restrictions, please call the person listed in the "Visit Authorized by" field.

Attachment 10
Hurricane Preparedness Plan

Hurricane Preparedness Plan
Non-Time Critical Removal Actions at
Former Defense Reutilization Marketing Office
Land Slivers
Naval Air Station Key West
Key West, Florida

Contract No. N62470-08-D-1006
Task Order No. JM31

Submitted to:



U.S. Naval Facilities
Engineering Command Southeast

Prepared by:



1000 Abernathy Road
Suite 1600
Atlanta, GA 30328

May 2012

Contents

1.0	Introduction.....	1-1
1.1	Purpose	1-1
1.2	Scope.....	1-1
1.3	Discussion.....	1-1
2.0	Definitions	2-1
3.0	Emergency Operating Procedures	3-1
3.1	Condition V – Destructive Winds are Possible within 96 Hours (Early Preparedness).....	3-1
3.2	Condition IV – Destructive Winds are Possible within 72 Hours	3-1
3.3	Condition III – Tropical Storm Warning (Destructive Winds are Possible within 48 Hours).....	3-2
3.4	Condition II – Destructive Winds are Possible within 24 Hours (Tropical Storm Warning)	3-2
3.4.1	Site Superintendent Responsibilities:.....	3-2
3.4.2	SSHO Responsibilities:.....	3-3
3.5	Condition I – Destructive Winds are Possible within 12 Hours	3-3
3.6	Resuming Site Operations	3-3
4.0	Debriefing	4-1
5.0	References	5-1

Attachments

- A Hurricane Preparedness Responsibility Checklists
- B Emergency Phone Numbers & Monroe County Florida Evacuation Route Map
- C Hurricane Tracking Map

Acronyms and Abbreviations

AGVIQ-CH2M HILL	AGVIQ-CH2M HILL Constructors Inc. Joint Venture III
COR	Condition of Readiness
EMS	Emergency Medical Services
ER	Emergency Response
ET	Engineering Technician
EZ	Exclusion Zone
FA	first aid
FEAD	Facility Engineering & Acquisition Division
FEMA	Federal Emergency Management Administration
GFCI	Ground Fault Circuit Interrupter
GDA	Government Designated Authority
GPR	Ground Penetrating Radar
HPP	Hurricane Preparedness Plan
mph	miles per hour
NAS Key West	Naval Air Station Key West
NAVFAC	Naval Facilities Engineering Command
NTR	Navy Technical Representative
NOAA	National Oceanic and Atmospheric Administration
OSHA	Occupational Safety and Health Administration
POC	Point of Contact
RPM	Remedial Project Manager
SAWTs	Sigsbee Annex Water Towers
SSHO	Site Safety and Health Officer

1.0 Introduction

1.1 Purpose

This procedure outlines the general responsibilities and actions to be taken in preparation for and response to a hurricane or hurricane warnings posted for the Florida Keys, where Naval Air Station Key West (NAS Key West) is located. All personnel should understand that predicting the occurrence and path of a hurricane is difficult, however the risk can be minimized and controlled by following the procedures in this plan.

1.2 Scope

This procedure is applicable to all contractor personnel, including AGVIQ-CH2M HILL Constructors Inc. Joint Venture III (AGVIQ-CH2MHILL) subcontractors and remediation equipment present at NAS Key West, Former Defense Reutilization Marketing Office Land Slivers project.

1.3 Discussion

This procedure provides information on how to protect personnel and property in the event of a hurricane. For the Florida Keys area, particular attention must be paid to all tropical storms and hurricanes due to the uncertainty of time and location of landfall.

The following table demonstrates accuracy of forecasting a hurricane landfall. Probability of a landfall occurrence is low-more than 24 hours in advance of a storm.

Hours Before Landfall (hours)	Maximum Probability Values (percent)
72	10
48	13-18
36	20-25
24	35-45
12	60-70

2.0 Definitions

The following definitions apply to various terms used in this document.

Conditions of Readiness (COR):

- **Condition V** - Destructive winds are possible at NAS KEY WEST **within 96 hours**. Normal daily job site cleanup and good housekeeping practices.
- **Condition IV** - Destructive winds are possible at NAS KEY WEST **within 72 hours**. Normal daily job site cleanup and good housekeeping practices. Collect and store in piles or containers, scrap lumber, waste material and rubbish, for removal and disposal at the end of each workday. Maintain the construction site, including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than 4 feet high. Remove all trash debris and other objects which could become missile hazards. Contact the designated project Naval Facilities Engineering Command (NAVFAC) Federal Engineering & Acquisitions Department (FEAD), Remedial Project Manager (RPM), Naval Technical Representative (NTR) or Engineering Technician (ET) Point of Contact (POC) for condition requirements, updates, and completion of required actions.
- **Condition III** - Destructive winds are possible at NAS Key West **within 48 hours**. Maintain **Condition IV** requirements. Begin securing the job site for and taking those actions necessary for **Condition I**, which cannot be completed within 18 hours. Cease all routine activities, which might interfere with securing operations. Begin collecting and stowing all gear and portable equipment. Make preparations for securing buildings. Review requirements pertaining to **Condition II** and continue action as necessary to attain **Condition III** readiness. Contact the weather station or NAS Key West Base security if necessary for weather and COR updates and completion of required actions.
- **Condition II** - Destructive winds are possible at NAS Key West **within 24 hours**. Curtail or cease routine activities until securing operations are complete. Reinforce or remove formwork and scaffolding. Secure machinery, tools, equipment, and materials, or remove from job site. Expend every effort to clear all missile hazards and loose equipment from the job site. Contact the designated NAVFAC FEAD, RPM, NTR or ET for weather and COR updates and completion of required actions.
- **Condition I** - Destructive winds are possible in at NAS Key West **within 12 hours**. Perform and complete all remaining actions required for lower conditions of readiness. Secure the job site and leave the government premises.
- **Destructive Winds** - Generally winds reaching or exceeding the force of a tropical storm (≥ 39 miles per hour [mph] or 34 knots). Winds from any storm system (tropical or otherwise) that are determined to have the potential to cause property damage or personal injury which would warrant NAS Key West to initiate a Condition IV alert.
- **Gale** - Non-tropical windstorm with winds 38 to 63 mph (33 to 55 knots).

- **Hurricane** - A tropical cyclone in which the maximum sustained surface wind is 74 mph (64 knots) or greater.
- **Hurricane Warning** - A warning that sustained winds of 74 mph (64 knots) or higher, associated with a hurricane, are expected in a specified coastal area in 24 hours or less.
- **Hurricane Watch** - An announcement for specific areas where a hurricane or an incipient hurricane poses a possible threat to a coastal area, generally within 36 hours.
- **Missile Hazard** - Any object that may become airborne during high winds.
- **Severe Weather** - Any storm of tropical or non-tropical origin that has the capacity to produce destructive winds.
- **Storm** - Non-tropical windstorm with winds 38 to 62 mph (33 to 55 knots).
- **Storm Surge** - An abnormal rise in sea level accompanying a hurricane or other intense storm, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the storm.
- **Storm Tide** - The actual sea level resulting from the astronomical tide combined with the storm surge. This term is used interchangeably with "Hurricane Tide."
- **Tornado** - Violent rotating columns of air with winds 115 to 288 mph (100 to 250 knots).
- **Tropical Depression** - A tropical low-pressure system in which the maximum sustained surface wind is 38 mph (33 knots) or less.
- **Tropical Storm** - A tropical low pressure system in which the maximum surface wind ranges from 39 to 73 mph (34 to 63 knots) inclusive. This is the strength at which the National Hurricane Center applies a name to the storm.
- **Tropical Storm Watch** - Tropical storm conditions pose a threat to a coastal area generally within 36 hours.
- **Tropical Storm Warning** - A warning for tropical storm conditions with sustained winds within the range of 39 to 73 mph (34 to 63 knots), which are expected in a specified coastal area within 24 hours or less.

3.0 Emergency Operating Procedures

3.1 Condition V – Destructive Winds are Possible within 96 Hours (Early Preparedness)

The Site Safety and Health Officer (SSHO) will notify the project manager and site superintendent (field team leader) when a tropical storm has been named and/or any severe weather has the potential to produce destructive winds at NAS Key West within **96 hours**. This will initiate COR Condition V. This phase will continue until:

- The storm or condition is downgraded.
- The storm track poses no threat to the site.
- Condition IV begins.

During Condition V, the progress of the storm will be monitored and tracked by Hurricane Tracking Maps (**Attachment A**). The Base will be contacted at least twice daily for Condition Requirements updates and to inform him of completion of required actions for Condition V.

See Attachment A for the Hurricane Preparedness Responsibility Checklist - Condition V.

3.2 Condition IV – Destructive Winds are Possible within 72 Hours

This COR starts when severe weather is within 72 hours of posing a threat to the project location. The SSHO will ensure that the following steps are taken:

- Monitor the storm and inform the Project Manager and Site Superintendent (field team leader) of its progress.
- Check personal protective equipment (PPE) supplies and equipment to determine if any shipments are required or if pending shipments should be advanced or postponed.

During Condition IV, the progress of the storm will be continuously monitored and tracked. The Site Superintendent (field team leader) or SSHO will instruct site personnel to begin general cleanup of all loose materials that may pose a hazard during high winds or rain. This will include removal of all debris, trash, and other debris that may become missile hazards. All form lumber will be stacked in neat piles less than 4 feet high. The designated NAVFAC FEAD, RPM, NTR or ET will be contacted (as appropriate) at least twice daily for Condition Requirements updates and to inform him of completion of required actions for Condition IV. Attachment B includes a list of emergency telephone numbers.

The Site Superintendent (field team leader) or SSHO will keep all site personnel advised of the status of the storm and site preparation activities. Due to the urgency and amount of work involved in preparing for a threatening storm, all construction operations that might interfere with securing operations, such as starting a major excavation, will cease.

The Site Superintendent (field team leader) will ensure that the following steps are taken:

- Fill fuel tanks in all equipment on site.
- Secure stockpiled material on site.
- Review requirements for Condition IV with all site personnel.
- Maintain Condition IV requirements.

See Attachment A for the Hurricane Preparedness Responsibility Checklist - Condition IV.

3.3 Condition III – Tropical Storm Warning (Destructive Winds are Possible within 48 Hours)

This COR starts when severe weather poses a threat to the project site within 48 hours. Condition III activities will also start if a threatening tropical storm is upgraded to a hurricane, or a severe storm approaching NAS Key West has generated destructive winds in other locations. The Project Manager, Site Superintendent (field team leader), and SSHO will determine when to cease all operations based upon current weather conditions and/or as directed by the Base contact. If the storm or Condition is downgraded, the Project Manager, Site Superintendent (field team leader), and SSHO will contact the designated NAVFAC FEAD, RPM, NTR or ET (as appropriate) to decide if a downgrade of the COR is appropriate. Actions for Condition III will be maintained and the following shall also be completed:

- Machinery, tools, equipment, and materials will be secured or removed from the site.
- Take actions to secure job site necessary for Condition I that cannot be completed within 18 hours.

See **Attachment A** for the Hurricane Preparedness Responsibility Checklist - Condition III.

3.4 Condition II – Destructive Winds are Possible within 24 Hours (Tropical Storm Warning)

Condition II begins when destructive winds are anticipated within 24 hours and/or as directed by the Base contact. The Project Manager, Site Superintendent (field team leader), and SSHO will determine when to demobilize from the site based upon weather conditions. During this phase:

3.4.1 Site Superintendent Responsibilities:

- Where a Site Superintendent (field team leader) is assigned to the project and on-site at the time of the Condition II warning, this individual shall be responsible for the following actions:
- Secure machinery, tools, equipment, and materials or remove them from the job site.
- Conduct a roll call of personnel on site and inform the SSHO.
- Notify personnel, on leave, of schedule changes.
- Personnel needing to leave the project to attend to personal matters will notify their Site Superintendent (field team leader) immediately.

- Heavy equipment will be secured according to the manufacturer's recommendations.
- All small field equipment will be secured.
- Where a full time SSHO is not assigned to or is not on the site at the time of the Condition II warning, the Site Superintendent (field team leader) shall execute the above responsibilities and the SSHO responsibilities identified in section 3.4.2 below.

3.4.2 SSHO Responsibilities:

- Where a SSHO is assigned to the project and on-site at the time of the Condition II warning, this individual shall be responsible for the following actions:
- All visitors from the site are evacuated.
- Make a final site walk-through to determine that the site is secure and clear all missile hazards from the job site.
- Inform the Project Manager that all personnel are being released from the site.
- Where a full time Site Superintendent (field team leader) is not assigned to or is not on the site at the time of the Condition II warning, the SSHO shall execute the above responsibilities and the Site Superintendent (field team leader) responsibilities identified in section 3.4.1 above.

If the storm or Condition is downgraded, the Project Manager, Site Superintendent (field team leader), and SSHO will conference to decide if a downgrade of the phase is necessary.

See Attachment A for the Hurricane Preparedness Responsibility Checklist - Condition II.

3.5 Condition I – Destructive Winds are Possible within 12 Hours

Condition I begins when destructive winds are anticipated within 12 hours and/or as directed by the Base contact. The Site Superintendent (field team leader) will ensure that the following steps are taken:

- Complete all remaining actions required for lower conditions of readiness.
- Secure job site access and evacuate to safe refuge.

See Attachment A for the Hurricane Preparedness Responsibility Checklist - Condition I.

3.6 Resuming Site Operations

The Project Manager will contact the Base to determine when site operations will resume. Although the hurricane/severe weather has passed, hazards may still exist because of water damage, other hazardous conditions, dangers from electric shock, poisonous snakes, etc.

The SSHO will conduct a damage survey with the Project Manager and Site Superintendent (field team leader). Photographs of the storm damage at the site will be taken by the Site Superintendent (field team leader). They will develop a prioritized recovery plan from the survey findings. Subsequently, all site personnel will be notified when it is safe to return to work. Required personnel and subcontractor expertise will be mobilized to the site to repair any damaged equipment.

See Attachment A for the Hurricane Preparedness Responsibility Checklist - Resume Site Operations.

4.0 Debriefing

Following the return to work of site personnel, the Site Superintendent (field team leader) will conduct a debriefing with site personnel. The debriefing will accomplish the following objectives:

- Finalize a recovery plan.
- Review the Hurricane Preparedness Plan for effectiveness.
- Suggest and agree on improvements to the plan.
- Incorporate plan changes.

When completed, the project manager and/or Site Superintendent (field team leader) will meet with site personnel to discuss any corrective actions or changes in this plan.

5.0 References

The following references and sources of information may be consulted for additional guidance on hurricane preparedness and response:

- Disaster Planning Guide for Business and Industry, Federal Emergency Management Administration (FEMA).
- U.S. Department of Commerce; National Oceanic and Atmospheric Administration (NOAA).

Attachment A

Hurricane Preparedness Responsibility Checklist

Hurricane Preparedness Checklist

Condition V (Landfall Within 96 Hours)

Date/Time Entered Condition V:_____

5.1 Severe Weather/Tropical Storm:

Action Items

- ☐ Notify Project Manager
- ☐ Track of Storm Poses No Threat
- ☐ Storm or Condition is Downgraded
- ☐ Upgrade to Condition IV

5.2 Storm Location

5.2.1 Date/Time:_____ 5.2.2 Date/Time:_____

Location/Coordinates:_____ Location/Coordinates:_____

5.2.3 Date/Time:_____ 5.2.4 Date/Time:_____

Location/Coordinates:_____ Location/Coordinates:_____

Condition V Action Items Complete:_____

Date:_____

Hurricane Preparedness Checklist

Condition IV (Landfall Within 72 hours)

Date/Time Entered Condition IV: _____

Action Items

- ☐ Notify Project Manager
- ☐ Notify Site Superintendent (field team leader)
- ☐ Notify Site Personnel
- ☐ Assemble shift personnel to begin preparation
- ☐ Track storm on hurricane tracking map (if applicable) (Attachment C)

The Project Foremen will ensure the following steps are taken:

- ☐ Secure all heavy equipment located at the site in accordance with manufacturer's specifications.
All equipment will be moved to a secured site location.
- ☐ All equipment fuel tanks will be filled.
- ☐ All subcontractors with equipment or supplies on site will be notified to begin removal procedures.

Condition IV Action Items Complete: _____

Date: _____

Hurricane Preparedness Checklist

Condition III (Landfall Within 48 hours)

Date/Time Entered Condition III: _____

Action Items

- ☐ Provide the status of the storm to site personnel on an hourly basis
- ☐ Take actions to secure job site necessary for Condition I that cannot be accomplished in 18 hours
- ☐ Recheck all items on checklist for Condition IV to ensure they are complete (i.e., gas tanks are still filled)

See itemized equipment checklist (itemized list of equipment to be secured/removed and COR for action)

Condition III Action Items Complete: _____

Date: _____

Hurricane Preparedness Checklist

Condition II (Landfall Within 24 Hours)

Date/Time Entered Condition II: _____

Action Items

- ☐ Evacuate all visitors from the site
- ☐ Conduct a role call of site personnel and inform the SSHO
- ☐ Check the status of all incoming shipments of supplies and equipment
- ☐ Remove all unnecessary vehicles from the site
- ☐ Secure heavy equipment in accordance with manufacturer's specification
- ☐ Secure all valuable records and equipment
- ☐ Release personnel from the site
- ☐ Recheck all items on checklist for Conditions IV and III to ensure they are complete (i.e., gas tanks are still filled)

Condition II Action Items Complete: _____

Date: _____

Hurricane Preparedness Checklist

Condition I (Landfall Within 12 Hours)

Date/Time Entered Condition I: _____

Action Items

- ☐ Complete all action items for lower conditions of readiness
- ☐ Secure job site access and evacuate to safe refuge

Condition I Action Items Complete: _____

Date: _____

Hurricane Preparedness Checklist

Resume Site Operations

Date/Time Resume Site Operations: _____

Action Items

- ☐ Conduct a damage survey
- ☐ Notify all site personnel when to return to work
- ☐ Develop a prioritized recovery plan
- ☐ Inspect electrical equipment before re-energizing to detect and repair damage
- ☐ Provide bottled water for drinking until normal drinking water is deemed safe to drink
- ☐ Remove storm debris from site
- ☐ Notify Base of the resumption of site activities

Resume Site Operations Action Items Complete: _____

Date: _____

Hurricane Preparedness Checklist

Itemized Equipment Checklist, Condition III.

[illegible]

Attachment B

Emergency Contact List Monroe County Florida Evacuation Route Map

Emergency Contact List

24-hour CH2M HILL Serious Incident Reporting Contact/Pager: 720-286-4911

CH2M HILL 24-hour Nurse Number: 866-893-2514

<p>Hospital #: (305) 294-5531 Fire/Spill Emergency: Quarterdeck (305) 293 2268 first, then 911 if necessary Local Fire Dept #: (305) 392-8145 Base Fire Dept: (305) 293 3333 (They will contact outside resources if necessary) Base Security & Police: (305) 293-2531 or 911 Local Police Dept #: (305) 809-1111 Utilities Emergency Water/Gas/Electric/Cable/Telephone: Contact Florida Sunshine One Call (800) 432-4770</p>	<p>CH2M HILL- Medical Consultant WorkCare Dr. Peter Greaney M.D. 300 S. Harbor Blvd, Suite 600 Anaheim , CA 92805 800-455-6155 714-978-7488 (After hours calls will be returned within 20 minutes) AGVIQ Medical Consultant(s) Refer to AGVIQ VBO office for a detailed list of Medical Facilities/contacts.</p>
<p>AGVIQ-CH2M HILL SBRAC Program Manager Name: Sidney Allison AGVIQ Phone 843-242-8018 (o); 843-813-2672 (cell)</p>	<p>AGVIQ-CH2M HILL Deputy Program Manager Name: Michael Halil CH2M HILL – (JXO) Phone: 904-777-4812 x 233/904-219-6277 (cell)</p>
<p>NAVFAC FEAD: Mel Herlehy (305) 797-1648 Tony Chiello (305) 797-1646</p>	<p>AGVIQ-CH2M HILL Project Manager (overall) Name: Amy Twitty CH2M HILL Phone: (850) 232-0320 (cell)</p>
<p>AGVIQ-CH2M HILL Site Supervisor Name: Randy Johnson Cell Phone:(757) 544-6769 AGVIQ-CH2M HILL Site Alternate SSHO Name: Isaac Lynch Cell Phone (352) 494-3822 AGVIQ-CH2M HILL Program HSPA Name: Glen Jackson - AGVIQ Cell Phone: (757) 644 8293 (757) 213 8592</p>	<p>AGVIQ-CH2M HILL Program CIH Name: Angelo Liberatore, CH2M HILL Constructors, Inc. (ATL) Phone: (678) 530-4210 / (770) 335-2076 (cell) AGVIQ-CH2M HILL Program HSPA Name: Mark Orman, CH2M HILL Constructors, Inc. (MKE) Phone: (414) 847-0597/(414) 712-4138 (Cell) AGVIQ-CH2MHILL FTL/SSHO Name: To be assigned</p>
<p>AGVIQ Corporate Human Resources Department & AGVIQ Worker's Compensation & Auto Claims Name: Sabrina Ben TIKIGAQ Corp. Anchorage, AK Phone: (907) 365 6129/ (907) 341-6139 (fax) AGVIQ personnel to report all accidents or injuries to AGVIQ Corporate HSM or HSO immediately but no later than 24 hrs. Fatalities and hospitalizations shall require immediate notification to AGVIQ Corporate HSM.</p>	<p>CH2M HILL Corporate Human Resources Department Name: Pete Hannon, DEN Phone: 303-771-0900 <hr/> CH2M HILL Worker's Compensation and Auto Claims Sterling Administration Services Phone: 800/420-8926 After hours: 800/497-4566 Report fatalities AND report vehicular accidents involving pedestrians, motorcycles, or more than two cars. Fatalities and hospitalizations shall require immediate notification to AGVIQ-CH2M HILL Program Management/ CIH.</p>
<p>AGVIQ Corporate HSM Name: Troy Izatt Office phone # (907) 365-6182 Cell phone # (907) 748-3697</p>	<p>Federal Express Dangerous Goods Shipping Phone: 800/238-5355 Emergency Number for Shipping Dangerous Goods Phone: 800/255-3924</p>
<p>Hospital Name/Address: See Figure 9-2-2 of this APP for Directions Lower Florida Keys Medical Center (305) 294-5531 5900 College Rd. Key West, FL 33040</p>	
<p>Evacuation Route: See Figure 9-2-1 of this APP for the Evacuation Route Map Details Incident Reporting: Contact the Project Manager (overall). Generally, the Project Manager will contact relevant client officials unless otherwise directed by the Program Manager. Refer to Figure 4-1 "AGVIQ-CH2M HILL Incident Notification and Chain of Command" of the APP.</p>	

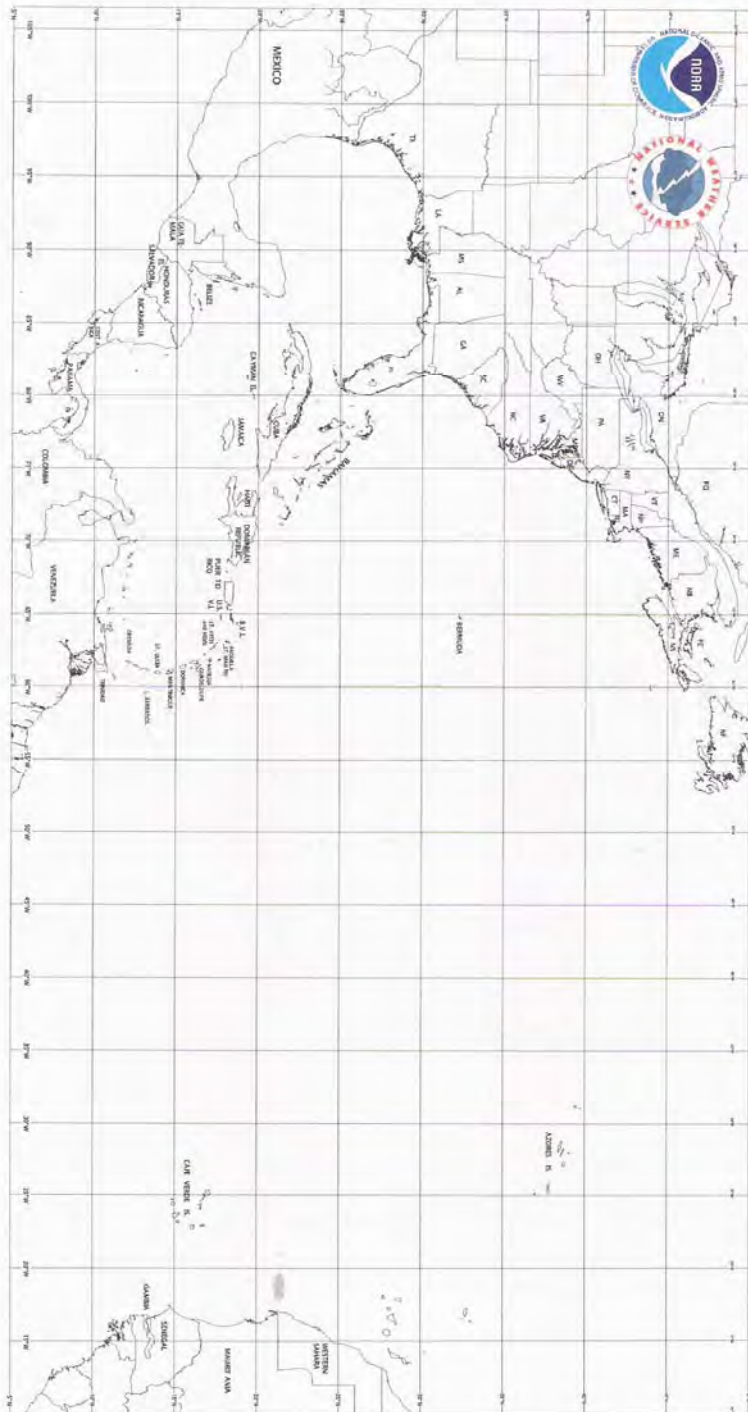


Attachment C

Hurricane Tracking Map

HURRICANE TRACKING MAP

Atlantic Basin Hurricane Tracking Chart
National Hurricane Center, Miami, Florida



This is a reduced version of the chart used to track hurricanes at the National Hurricane Center

Appendix B

Quality Control Attachments



June 20, 2012

Mr. Randy Dumaop
AGVIQ, LLC
4610 Westgrove Court
Virginia Beach, VA 23455

RE: Contract No. N62470-08-D-1006
Task Order No. JM31
Naval Air Station (NAS) Key West – Key West, Florida
Project Quality Control Manager Letter of Appointment

Dear Mr. Dumaop:

Herein describes the responsibilities and authority delegated to you in your capacity as the Project QC Manager for the NAS Key West Task Order (TO) No. JM31 under the Navy Atlantic Small Business RAC (SB RAC) Contract No. N62470-08-D-1006.

In this position, you assist and represent the Program QC Manager in continued implementation and enforcement of the Project QC Plans. Your primary role is to ensure all requirements of the contract are met. Consistent with this responsibility, you will: (i) implement the QC program as described in the SB RAC contract; (ii) manage the site-specific QC requirements in accordance with the Project QC Plans; (iii) attend the coordination and mutual understanding meeting; (iv) conduct QC meetings; (v) oversee implementation of the three phases of control; (vi) perform submittal review and approval; (vii) ensure testing is performed; (viii) prepare QC certifications and documentation required in the SB RAC Contract; and, (ix) furnish a Completion Certificate to the Contracting Officer or designated representative, upon completion of work under a contract task order, attesting that “the work has been completed, inspected, and tested, and is in compliance with the contract.”

Your responsibilities further include identifying and reporting quality problems, rejecting nonconforming materials, initiating corrective actions, and recommending solutions for nonconforming activities.

You have the authority to control or stop further processing, delivery, or installation activities until satisfactory disposition and implementation of corrective actions are achieved. You have the authority to direct the correction of non-conforming work. All work requiring corrective action will be documented on daily reports, and, in the event non-conforming work is not immediately corrected you are required to submit a non-conformance report to the PM and copy the Program QC Manager. A status log will be kept of all non-conforming work. You shall immediately notify the Program QC Manager in the event of any stop work order.

It is imperative that you comply with all terms of the basic contract. In particular, Section C, Paragraph 6.5.2, which states:

“No work or testing may be performed unless the QC Program Manager or Project QC Manager is on the work site.”

In the event that you are not able to be at the work site when work or testing is to be performed, it is your responsibility to inform the Program QC Manager and Project Manager, in advance, so that other arrangements can be made.

Further, if you are requested to perform the duties of the Site Supervisor, it is your responsibility to inform the Program QC Manager so that approval can be obtained in advance from the Contracting Officer or designated representative, in accordance with Section C Paragraph 6.6.2.1 of the contract.

You are a key member of the Project Manager’s team. You ensure that work meets the specific requirements and intent of the work plan, the Navy’s scope of work and the basic contract. Should you have any questions regarding this role, you should immediately contact the Program QC Manager, Theresa Rojas. Your day-to-day activities on the site should be coordinated with all site personnel and the Project Manager. In event of any deficient items, the Superintendent and Project Manager should be advised immediately so they have opportunity to remedy the situation.


Sincerely,

CH2M HILL Constructors, Inc.




Michael Halil
Deputy Program Manager


Submittal Register


Contract Number: N62470-08-D-1006			TO No.: JM31		TO Title: Non-Time Critical Removal Actions at Former Defense Reutilization Marketing Office Land Slivers				Location:DRMO SLIVERS, NAS Key West, FL					Contractor:			
Spec Section	Item Description		Para. Number	Approving Authority	Other Reviewers	Submittal Number	Scheduled Submission Date	AGVIQ- CH2M HILL Review Date	AGVIQ- CH2M HILL Disposition	AGVIQ- CH2M HILL Transmit Date	QC Admin Received Date	QC Disposition	QC Admin Transmit Date	Contracting Officer Received	Contracting Officer Disposition	Contracting Officer Return	Remarks
	SD-07 Schedules																
		Project Schedule															
	SD-09 Reports																
		Technical Memorandum															
		Analytical Reports															
	SD-13 Certificates																
		Analytical Laboratory Certification															
		Disposal Facility Permit															
		Transporter Permit															
	SD-18 Records																
		Contaminated Soil/Water Disposal Profile															
		Contaminated Soil/Water Disposal Manifests															
		Contractor Production Reports															
		Contractor QC Reports															
		Transportation and Disposal Log															
		Testing Plan and Log															
		Monthly Summary Report of Field Tests															
	SD-21 Sampling and Analysis Plan																
		UFP-SAP															
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																
	SD-																


Testing Plan and Log


[illegible]

 Small Business RAC N62470-08-D-1006	CONTRACTOR PRODUCTION REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)	DATE OF REPORT: REVISION NO: REVISION DATE:			
TO NO: JM31	PROJECT NAME/LOCATION: DPT GW Investigation/DRMO Slivers, NAS Key West, FL	REPORT NO:			
PROJECT NO:	SUPERINTENDENT:	SITE H&S SPECIALIST:			
AM WEATHER:	PM WEATHER:	MAX TEMP: F MIN TEMP: F			
SUMMARY OF WORK PERFORMED TODAY					
<div style="border: 2px solid black; border-radius: 50%; width: 80px; height: 150px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 1.2em;">JOB SAFETY</div> </div>	Was A Job Safety Meeting Held This Date? <input type="checkbox"/> Yes <input type="checkbox"/> No	TOTAL WORK HOURS ON JOB SITE THIS DATE (Including Continuation Sheets)			
	Were there any lost-time accidents this date? (If Yes, attach copy of completed OSHA report) <input type="checkbox"/> Yes <input type="checkbox"/> No	CH2MHILL On-Site Hours			
	Was a Confined Space Entry Permit Administered This Date? (If Yes, attach copy of each permit) <input type="checkbox"/> Yes <input type="checkbox"/> No	AGVIQ On-Site Hours			
	Was Crane/Manlift/Trenching/Scaffold/HV Elec/High Work/Hazmat Work Done?? (If Yes, attach statement or checklist showing inspection performed) <input type="checkbox"/> Yes <input type="checkbox"/> No	Subcontractor On-Site Hours			
	Was Hazardous Material/Waste Released into the Environment? (If Yes, attach description of incident and proposed action) <input type="checkbox"/> Yes <input type="checkbox"/> No	Total On-Site Hours This Date			
		Cumulative Total of Work Hours From Previous Report			
SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED (Include Safety Violations, Corrective Instructions Given, Corrective Actions Taken, and Results of Safety Inspections Conducted):					
EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB					
DESCRIPTION OF EQUIPMENT/MATERIAL RECEIVED	MAKE/ MODEL/ MANUFACTURER	EQUIPMENT/ LOT NUMBER			
EQUIPMENT USED ON JOB SITE TODAY.					
EQUIPMENT DESCRIPTION	EQUIPMENT MAKE/MODEL	SAFETY CHECK PERFORMED BY	NUMBER OF HOURS		
			USED	IDLE	REPAIR
CHANGED CONDITIONS/DELAY/CONFLICTS ENCOUNTERED (List any conflicts with the delivery order [i.e., scope of work and/or drawings], delays to the project attributable to site and weather conditions, etc.):					
VISITORS TO THE SITE:					
LIST OF ATTACHMENTS (OSHA report, confined space entry permit, incident reports, etc.):					
SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/>					
_____ SUPERINTENDENT'S SIGNATURE				_____ DATE	

		CONTRACTOR QUALITY CONTROL REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)		REPORT DATE: REVISION NO: REVISION DATE:	
TO NO: JM31		PROJECT NAME/LOCATION DPT GW Investigation/DRMO Slivers, NAS Key West, FL		REPORT NO:	
PROJECT NO:		PROJECT QC MANAGER:		SITE H&S SPECIALIST:	
SAFETY MEETINGS AND INSPECTIONS					
WAS A SAFETY MEETING HELD THIS DAY?		<input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ATTACH SAFETY MEETING MINUTES			
WAS CRANE USED ON THE SITE THIS DAY?		<input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ATTACH DAILY CRANE REPORT OF INSPECTION AND CONTRACTOR CRANE OPERATION CHECKLIST			
DEFINABLE FEATURES OF WORK STATUS					
DFOW No.	Definable Feature Of Work	Preparatory	Initial	Follow-Up	
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PREPARATORY	WAS PREPARATORY PHASE WORK PERFORMED TODAY? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.				
	DFOW No.(from list above).	TASK/ACTIVITY		PREPARATORY PHASE REPORT NO.	
INITIAL AND FOLLOW-UP FEATURE OF WORK COMMENTS					
DFOW No.(from list above)	Phase	Comment/Finding/Action			
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
	Initial <input type="checkbox"/> Follow up <input type="checkbox"/>				
REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)		REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)			
TASK/ACTIVITY	DATE ISSUED	DESCRIPTION	TASK/ACTIVITY	CORRECTIVE ACTION(S) TAKEN	

AGVIQ-CH2M HILL 		CONTRACTOR QUALITY CONTROL REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)			REPORT DATE: REVISION NO: REVISION DATE:	
CTO NO:		PROJECT NAME/LOCATION:			REPORT NO:	
PROJECT NO:		PROJECT QC MANAGER:		SITE H&S SPECIALIST:		
SAMPLING/TESTING PERFORMED						
SAMPLING/TESTING PERFORMED		SAMPLING/TESTING COMPANY		SAMPLING/TESTING PERSONNEL		
MATERIALS/EQUIPMENT INSPECTION (Materials received and inspected against specifications)						
MATERIAL/EQUIPMENT DESCRIPTION		SPECIFICATION		MATERIAL ACCEPTED?		COMMENT/REASON/ACTION
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
SUBMITTALS INSPECTION / REVIEW						
SUBMITTAL NO	SUBMITTAL DESCRIPTION	SPEC/PLAN REFERENCE		SUBMITTAL APPROVED?		COMMENT/REASON/ACTION
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
				YES <input type="checkbox"/> NO <input type="checkbox"/>		
OFF-SITE SURVEILLANCE ACTIVITIES, INCLUDING ACTIONS TAKEN:						
ACCUMULATION/STOCKPILE AREA INSPECTION						
INSPECTION PERFORMED BY:				SIGNATURE OF INSPECTOR:		
ACCUMULATION/ STOCKPILE AREA LOCATION						
NO OF CONTAINERS:		NO OF TANKS:		NO OF ROLL-OFF BOXES:		NO OF DRUMS:
INSPECTION RESULTS:						
TRANSPORTATION AND DISPOSAL ACTIVITIES/SUMMARY/QUANTITIES:						
GENERAL COMMENTS (rework, directives, etc.):						
LIST OF ATTACHMENTS (examples, as applicable: preparatory phase checklist, QC meeting minutes, safety meeting minutes, crane inspections, crane operation checklist, COCs, weight tickets, manifests, profiles, rework item list, testing plan and log, etc.):						
<i>On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.</i>						
				PROJECT QC MANAGER'S SIGNATURE		DATE
<i>On behalf of the contractor, I attest that the work for which payment is requested, including stored material, is in compliance with contract requirements.</i>						
				PROJECT QC MANAGER'S SIGNATURE		DATE

SMALL BUSINESS RAC 		PREPARATORY PHASE REPORT		REPORT NO:	REPORT DATE: REVISION NO: REVISION DATE:
PROJECT NO: 406153		DEFINABLE FEATURE OF WORK: Non-Time Critical Removal Actions at Former Defense Reutilization Marketing Office Land Slivers		SITE/ACTIVITY: DRMO Land Slivers	
PERSONNEL PRESENT					
	NAME		POSITION		COMPANY/GOVERNMENT
SUBMITTALS	REVIEW SUBMITTALS AND/OR SUBMITTAL REGISTER.		HAVE ALL SUBMITTALS BEEN APPROVED? YES <input type="checkbox"/> NO <input type="checkbox"/>		
	IF NO, WHAT ITEMS HAVE NOT BEEN SUBMITTED?				
	ARE ALL MATERIALS ON HAND? YES <input type="checkbox"/> NO <input type="checkbox"/>				
	IF NO, WHAT ITEMS ARE MISSING?				
MATERIAL STORAGE	ARE MATERIALS STORED PROPERLY? YES <input type="checkbox"/> NO <input type="checkbox"/>				
	IF NO, WHAT ACTION IS TAKEN?				
SPECIFICATIONS	REVIEW EACH PARAGRAPH OF SPECIFICATIONS.				
	DISCUSS PROCEDURE FOR ACCOMPLISHING THE WORK.				
	CLARIFY ANY DIFFERENCES.				
PRELIM WORK & PERMITS	ENSURE PRELIMINARY WORK IS CORRECT AND PERMITS ARE ON FILE.				
	IF NO, WHAT ACTION IS TAKEN?				

SMALL BUSINESS RAC 		PREPARATORY PHASE REPORT		REPORT NO:	REPORT DATE: REVISION NO: REVISION DATE:
PROJECT NO: 406153		DEFINABLE FEATURE OF WORK: Non-Time Critical Removal Actions at Former Defense Reutilization Marketing Office Land Slivers		SITE/ACTIVITY: DRMO Land Slivers	
TESTING	IDENTIFY TEST TO BE PERFORMED, FREQUENCY, AND BY WHOM.				
	TEST		FREQUENCY		PERFORMER
	WHEN REQUIRED?				
	WHERE REQUIRED?				
	REVIEW TESTING PLAN.				
	HAVE TEST FACILITIES BEEN APPROVED?				
TEST FACILITY			APPROVED?		
			YES <input type="checkbox"/> NO <input type="checkbox"/>		
			YES <input type="checkbox"/> NO <input type="checkbox"/>		
SAFETY	ACTIVITY HAZARD ANALYSIS APPROVED? YES <input type="checkbox"/> NO <input type="checkbox"/>				
	REVIEW APPLICABLE PORTION OF EM 385-1-1 AND AHA.				
MEETING COMMENTS	NAVY/ROICC COMMENTS DURING MEETING.				
OTHER ITEMS OR REMARKS	OTHER ITEMS OR REMARKS:				
QC REPRESENTATIVE'S NAME		QC REPRESENTATIVE'S SIGNATURE		DATE	



Monthly Summary Report of Field Tests

Start Date:	End Date:	Submittal Date:	Submitted By:
Contract Number: N62470-08-D-1006	TO No.: JM31	TO Title: Non-Time Critical Removal Actions at Former Defense Reutilization Marketing Office Land Slivers	Location: NAS Key West, key West, Florida
Type of Test Required	Date of Test	Reporting Laboratory	Test Results



TRANSPORTATION AND DISPOSAL LOG

Version Date: 6/13/2012

[illegible]

Notes:

File Status Codes

1 = Need Manifest

2 = Need Weight Ticket

3 = Need CD

4 = File Complete